obsolete
DOS III A

DOS III EXTENDED FILE MANAGER (EXEC MODULES)
SOFTWARE VERSION (NON EAU)
(REV A)

BINARY TAPE	24309-60001
SOURCE TAPES	24309-80001
	24309-80002
	24309-80003
	24309-80004
	24309-80009
	24309-80010
	24309-80011
	24309-80012
	24309-80013
	24309-80014
	24309-80015
SOURCE LISTING	24309-90001

```
JOB       ,          TIME=0018 MIN. 26.3 SECS.

 PAGE 0001

0001                ASMB,R,L,C,X,B      $EX30
**  NO ERRORS*
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0001                    ASMB,R,L,C,X,B      $EX30
0003  00000                     NAM $EX30,0
0004                            ENT $EX30,EFCON
0005                            EXT $BUF
0006                            EXT $MDLD
0007                            EXT $DISC
0008                            EXT $SYIO,$WAIT
0009                            EXT $CLER
0010                            EXT DEF04
0011                            EXT DEF31,DEF32,DEF33
0012                            ENT ENDTS,AINVC,SRCDR
0013                            ENT FLNGH,NOTRB,NSUWA,WPTRB,NXOTL,NXTFP
0014                            ENT OPNTB,STSWA,TRBUF,TRBSZ,ARQP1,DPNO
0015                            ENT A$BUF,END$B,NOPAS,FTRBE,PN
0016                            ENT OPNT1,PAKSC,OPNSZ,OPNTE,PNEAD,APN00
0017                            ENT DESIZ,TRKIO,SECIO,CNAME,NOSEC
0018                            ENT VALSU
0019                            ENT ERROR
0020                            ENT MOVCT,NXPTL,EBIAS,GTNXE,G$C,GN$
0021                            ENT MA$UB
0022  00000    A        EQU 0
0023  00001    B        EQU 1
0024  00053    .        EQU 53B
0025  00100    @        EQU 100B
0026  00073    L7BT     EQU 73B
0027  00074    L8BT     EQU 74B
0028  00075    H8BT     EQU 75B
0029  00100    UMLWA    EQU *+0
0030  00101    JBINS    EQU *+1
0031  00102    JBINC    EQU *+2
0032  00115    SYSBF    EQU *+15B
0033  00116    SECTR    EQU *+16B
0034  00154    DISCO    EQU *+54B
0035  00155    SYSSC    EQU *+55B
0036  00156    SCCNT    EQU *+56B
0037  00157    UDNTS    EQU *+57B
0038  00160    SYNTS    EQU *+60B      NEXT SYST. DISC TRACK/SECT.
0039  00161    CUDSC    EQU *+61B
0040  00162    CRFLG    EQU *+62B      CURRENT DISC REQ. FLAG, 0=S,1=UD
0041  00163    CUDLA    EQU *+63B
0042  00245    EXMOD    EQU *+145B
0043  00254    UMFWA    EQU *+154B
0044  00305    TEMP     EQU *+205B
0045  00323    EOJFL    EQU *+223B
0046  00330    XFLG     EQU *+230B
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0048  00000          $EX30 EQU *
0049  00000 000000         NOP             DUMMY
0050  00001 003400         CCA
0051  00002 072551R        STA EFRUN       SET EFMP RUNNING
0052*
0053* RESOLVE ADDRESS OF $BUF
0054*
0055  00003 062542R        LDA A$BUF
0056  00004 002001         RSS
0057  00005 160000         LDA 0,I
0058  00006 001275         RAL,CLE,SLA,ERA
0059  00007 026005R        JMP *-2
0060  00010 072542R        STA A$BUF       ADDR OF $BUF
0061  00011 042503R         ADA D127
0062  00012 072510R        STA END$B       ADDRESS OF $BUF+127
0063*
0064  00013 060323         LDA EOJFL       END-OF-JOB FLAG
0065  00014 002002         SZA             START OF NEW JOB?
0066  00015 026023R        JMP OLDJO       NO, OLD "JOB"
0067  00016 002400         CLA
0068  00017 072166R        STA VALSU       REINITIALIZE VALID SETUP FLAG
0069  00020 072522R        STA NSUWA       NO. SECT. USED IN WORK
0070  00021 062167R        LDA ADABR       ADDR. OF ABORT ROUTINE
0071  00022 070323         STA EOJFL       SET FOR DOS-M
0072  00023          OLDJO EQU *
0073* MOVE ARGS INTO EFMP BUFFER ARG1
0074  00023 062457R        LDA ARGCN       ADDR. OF SOURCE
0075  00024 064041         LDB MD10
0076  00025 076744R        STB MOVCT
0077  00026 066460R        LDB AARGC       ADDR. OF DESTINATION
0078  00027 016731R        JSB MOVE        MOVE ARRAY
0079  00030 060157         LDA UDNTS
0080  00031 072145R        STA .UDNT
0081  00032 060161         LDA CUDSC
0082  00033 072146R        STA .CUDS
0083  00034 162542R        LDA ARG2,I      EFMP FUNCTION NO.
0084  00035 000000         OCT 0           OCT 107001
0085  00036 002003         SZA,RSS         TOO SMALL?
0086  00037 016344R        JSB ER1         YES
0087  00040 002020         SSA
0088  00041 016344R        JSB ER1
0089  00042 003004         CMA,INA
0090  00043 042422R        ADA MAXFN       (-) MAX. NO. OF FUNCTIONS
0091  00044 002020         SSA             TOO BIG?
0092  00045 016344R        JSB ER1         YES
0093  00046 166542R        LDB ARG2,I      EFMP FUNCTION NO.
0094  00047 046462R        ADB AERWD       POINTER TO ERROR TABLE
0095  00050 062537R        LDA ARGCT       COUNT OF NO. OF PARAMETERS
0096  00051 150001         CPA B,I         VALID COUNT?
0097  00052 002001         RSS             YES
0098  00053 016360R        JSB ER20
0099  00054 062464R        LDA AMODN       ADDR. OF MODULE NO.
0100  00055 142542R        ADA ARG2,I
0101  00056 160000         LDA A,I         PICK UP MODULE NO.
0102  00057 066463R        LDB AFNTB       ADDR. OF FUNCTION TABLE
0103  00060 146542R        ADB ARG2,I      CALCULATE FUNCTION NO.
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0104  00061 164001          LDB B,I         PICK UP CORE ADDR
0105  00062 052501R         CPA D30         CORE RES. LOCATION ?
0106  00063 124001          JMP B,I         YES

0108  00064 074305          STB TEMP        SAVE FOR EXEC
0109  00065 026002X         JMP $MDLD       MODULE LOAD IN EXEC

0111  00066           EFCON EQU *           EFMP CONTINUATION FROM MODULES
0112  00066 002400          CLA



0114  00067           ERROR EQU *
0115  00067 072150R         STA EADDR+1     SAVE ERROR NO.
0116  00070 076147R         STB EADDR
0117  00071 062540R         LDA ARGRT       RETURN ADDR.
0118  00072 040052          ADA MD1
0119  00073 160000          LDA A,I         ADDR. OF ERROR WORD
0120  00074 006404          CLB,INB         NO. WDS. TO CHECK
0121  00075 016237R         JSB CKCLM       CHECK CORE LIMITS
0122  00076 026102R         JMP ERERR       ERROR 9
0123  00077 070001          STA B           SAVE EFFECTIVE ADDR. OF ERROR LO
0124  00100 062150R         LDA EADDR+1     ERROR NO.
0125  00101 170001          STA B,I
0126  00102           ERERR EQU *
0127  00102 016125R         JSB RLEXM       RELEASE EXEC MODULE
0128  00103 062150R         LDA EADDR+1     ERROR NO.
0129  00104 002003          SZA,RSS         ANY ERRORS ?
0130  00105 026113R         JMP DOSUM       NO, DO CHECK SUM
0131  00106 166542R         LDB ARG2,I
0132  00107 054054          CPB D1          DEFINE WITH ERROR ?
0133  00110 026115R         JMP NOSUM       YES, IGNORE CHECK SUM
0134  00111 052471R         CPA D12         BUFFER ERROR?
0135  00112 026115R         JMP *+3         YES, IGNORE CK. SUM
0136  00113           DOSUM EQU *
0137  00113 017177R         JSB CKSUM       CALC. CK. SUM
0138  00114 072166R         STA VALSU       SAVE FOR NEXT ENTRY
0139  00115           NOSUM EQU *
0140  00115 002400          CLA
0141  00116 072551R         STA EFRUN       RESET EFMP RUNNING FLAG
0142  00117 066147R         LDB EADDR
0143  00120 062150R         LDA EADDR+1
0144  00121 000000          OCT 0           OCT 107002 FOR DEBUGGING
0145  00122 102100          STF 0
0146  00123 102705          STC 5
0147  00124 126540R         JMP ARGRT,I     RETURN TO CALLING PROG.

0149  00125 000000  RLEXM   NOP             RELEASE EXEC MODS.
0150  00126 062145R         LDA .UDNT
0151  00127 070157          STA UDNTS
0152  00130 062146R         LDA .CUDS
0153  00131 070161          STA CUDSC
0154  00132 060074          LDA L8BT
0155  00133 070163          STA CUDLA
0156  00134 060245          LDA EXMOD       EXEC MOD. CURRENTLY RUNNING
0157  00135 052151R         CPA MD31
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0158  00136 003004          CMA,INA
0159  00137 052152R         CPA MD32
0160  00140 003004          CMA,INA
0161  00141 052153R         CPA MD33
0162  00142 003004          CMA,INA
0163  00143 070245          STA EXMOD       RESTORE IT
0164  00144 126125R         JMP RLEXM,I     RETURN
0165  00145 000000  .UDNT   OCT 0           TEMP.
0166  00146 000000  .CUDS   OCT 0           TEMP.
0167  00147 000000  EADDR   OCT 0,0
      00150 000000
0168  00151 177741  MD31    DEC -31
0169  00152 177740  MD32    DEC -32
0170  00153 177737  MD33    DEC -33
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0173   00154 000000  CKVSU NOP             CHECK IF VALID SETUP
0174   00155 062166R       LDA VALSU       VALUE SETUP FLAG
0175   00156 002003       SZA,RSS          VALID?
0176   00157 016347R       JSB ER12        NO
0177   00160 017177R       JSB CKSUM       CALC. CK. SUM
0178   00161 052166R       CPA VALSU       SAME AS PREVIOUS EXIT?
0179   00162 126154R       JMP CKVSU,I     YES, VALID. RETURN
0180   00163 002400        CLA
0181   00164 072166R       STA VALSU
0182   00165 016347R       JSB ER12
0183*      JMP CKVSU,I    NOT NEEDED
0184   00166 000000  VALSU OCT 0           VALID SETUP FLAG

0186   00167 000170R ADABR DEF ABORT
0187   00170 000000  ABORT NOP             ABORT CLEAN UP AND EOJ
0188   00171 016006X       JSB $CLER       CLEAR ALL I/O
0189   00172 062551R       LDA EFRUN
0190   00173 002003       SZA,RSS          EFMP INTERRUPTED?
0191   00174 026205R       JMP NOERR       NO
0192   00175 016004X       JSB $SYIO
0193   00176 000002        DEC 2
0194   00177 000001        OCT 1
0195   00200 000224R       DEF MS10
0196   00201 000030        ABS LM10
0197   00202 000204R       DEF *+2
0198   00203 026005X       JMP $WAIT
0199   00204 026217R       JMP ABNO
0200   00205         NOERR EQU *           NO ERROR
0201   00205 060157        LDA UDNTS
0202   00206 072145R       STA .UDNT
0203   00207 060161        LDA CUDSC
0204   00210 072146R       STA .CUDS
0205   00211 062166R       LDA VALSU       VALID SETUP
0206   00212 002003       SZA,RSS          VALID?
0207   00213 026217R       JMP ABNO        NO
0208   00214 017177R       JSB CKSUM       CALC. CK.SUM
0209   00215 052166R       CPA VALSU       SAME AS PREVIOUS?
0210   00216 016556R       JSB POST        YES, CLEAN UP BUFFERS
0211   00217         ABNO  EQU *
0212   00217 002400        CLA
0213   00220 072551R       STA EFRUN       SET EFMP NOT RUNNING
0214   00221 070323        STA EOJFL       RESET FLAG FOR DOS-M TO CALL EFM
0215   00222 016125R       JSB RLEXM       RELEASE EXEC. MOD.
0216   00223 126170R       JMP ABORT,I     RETURN TO DOS-M

0218   00224 042506  MS10  ASC 24,EFMP INTERRUPTED BEFORE PREVIOUS CALL C
       00225 046520
       00226 020111
       00227 047124
       00230 042522
       00231 051125
       00232 050124
       00233 042504
       00234 020102
       00235 042506
       00236 047522
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      00237 042440
      00240 050122
      00241 042526
      00242 044517
      00243 052523
      00244 020103
      00245 040514
      00246 046040
      00247 041517
      00250 046520
      00251 046105
      00252 052105
      00253 027040
0219  00030          LM10   EQU *-MS10



0221  00254 000000   MASUB  NOP             MAIN SUBROUTINE
0222  00255 072273R         STA  MSA
0223  00256 076274R         STB  MSB
0224  00257 162254R         LDA  MASUB,I     PICK UP SUB INDEX
0225  00260 042276R         ADA  ASUBT       ADDR. OF SUB. TABLE
0226  00261 160000          LDA  A,I         PICK UP ADDR. OF DESIRED SUB.
0227  00262 066254R         LDB  MASUB
0228  00263 044051          ADB  MD2
0229  00264 164001          LDB  B,I         PICK UP RETURN ADDR.
0230  00265 174000          STB  A,I         PACK RETURN ADDR.
0231  00266 002004          INA              POINT TO 2ND LOC. IN SUB. DESIR.
0232  00267 072275R         STA  MACAL
0233  00270 062273R         LDA  MSA
0234  00271 066274R         LDB  MSB
0235  00272 126275R         JMP  MACAL,I     CALL SUBROUTINE
0236  00273 000000   MSA    OCT  0           A-REG.
0237  00274 000000   MSB    OCT  0           B-REG
0238  00275 000000   MACAL  OCT  0           CALL LOCATION +1 FOR DESIRED SUB
0239  00276 000276R  ASUBT  DEF  SUBTB-1
0240  00277          SUBTB  EQU  *
0241  00277 000731R         DEF  MOVE              1
0242  00300 000556R         DEF  POST              2
0243  00301 000571R         DEF  POSTW             3
0244  00302 000154R         DEF  CKVSU             4
0245  00303 000745R         DEF  NAM0?             5
0246  00304 000754R         DEF  CRPN0             6
0247  00305 001034R         DEF  CKPN              7
0248  00306 003144R         DEF  SVPNS             8
0249  00307 001054R         DEF  CKNAP             9
0250  00310 001062R         DEF  SETD1            10
0251  00311 001071R         DEF  SETD2            11
0252  00312 002553R         DEF  GETDE            12
0253  00313 003165R         DEF  REPNS             13
0254  00314 002577R         DEF  CNVDA            14
0255  00315 002633R         DEF  CNPND            15
0256  00316 003041R         DEF  MVPNT            16
0257  00317 001137R         DEF  GETPN            17
0258  00320 002214R         DEF  CKOPN            18
0259  00321 001267R         DEF  SRCDR            19
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0260  00322 001231R        DEF GTNPN          20
0261  00323 001545R        DEF CKDSP          21
0262  00324 002237R        DEF CKCLM          22
0263  00325 002306R        DEF CMPAR          23
0264  00326 003002R        DEF CKPNT          24
0265  00327 002047R        DEF PKDIR          25
0266  00330 002356R        DEF T,STS          26
0267  00331 002400R        DEF STT,S          27
0268  00332 002413R        DEF STZ            28
0269  00333 002424R        DEF GRTXX          29
0270  00334 002510R        DEF GWTXX          30
0271  00335 002674R        DEF CKSPC          31
0272  00336 002714R        DEF STPNO          32
0273  00337 002740R        DEF SFSTS          33
0274  00340 002753R        DEF PRETS          34
0275  00341 002765R        DEF PRWIO          35
0276  00342 003226R        DEF MPY            36
0277  00343 003246R        DEF DIV            37


0279  00344          ER1    EQU *
0280  00344 000000         OCT 0
0281  00345 060054         LDA D1
0282  00346 016377R        JSB ERR
0283  00347          ER12   EQU *
0284  00347 000000         OCT 0
0285  00350 062471R        LDA D12
0286  00351 016377R        JSB ERR
0287  00352          ER15   EQU *
0288  00352 000000         OCT 0
0289  00353 062472R        LDA D15
0290  00354 016377R        JSB ERR
0291  00355          ER17   EQU *
0292  00355 000000         OCT 0
0293  00356 062473R        LDA D17
0294  00357 016377R        JSB ERR
0295  00360          ER20   EQU *
0296  00360 000000         OCT 0
0297  00361 062474R        LDA D20
0298  00362 016377R        JSB ERR
0299  00363          ER23   EQU *
0300  00363 000000         OCT 0
0301  00364 062475R        LDA D23
0302  00365 016377R        JSB ERR
0303  00366          ER24   EQU *
0304  00366 000000         OCT 0
0305  00367 062476R        LDA D24
0306  00370 016377R        JSB ERR
0307  00371          ER27   EQU *
0308  00371 000000         OCT 0
0309  00372 062477R        LDA D27
0310  00373 016377R        JSB ERR
0311  00374          ER28   EQU *
0312  00374 000000         OCT 0
0313  00375 062500R        LDA D28
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0314  00376 016377R        JSB ERR
0315  00377 000000  ERR    NOP
0316  00400 066377R        LDB ERR
0317  00401 044050         ADB MD3
0318  00402 164001         LDB B,I        PICK UP LOC OF ERROR
0319  00403 026067R        JMP ERROR
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```
0321  00404           FNTBS EQU *          EFMP FUNCTION TABLE START
0322  00404 000010X         DEF DEF31      FUNC. NO. 1
0323  00405 000010X         DEF DEF31      FUNC. NO. 2
0324  00406 000010X         DEF DEF31      FUNC. NO. 3
0325  00407 000010X         DEF DEF31      FUNC. NO. 4
0326  00410 000010X         DEF DEF31      FUNC. NO. 5
0327  00411 000011X         DEF DEF32      FUNC. NO. 6
0328  00412 000010X         DEF DEF31      FUNC. NO. 7
0329  00413 000011X         DEF DEF32      FUNC NO. 8
0330  00414 000011X         DEF DEF32      FUNC. NO. 9
0331  00415 000011X         DEF DEF32      FUNC. NO. 10
0332  00416 000012X         DEF DEF33      FUNC. NO. 11
0333  00417 000012X         DEF DEF33      FUNC. NO. 12
0334  00420 000011X         DEF DEF32      FUNC. NO. 13
0335  00421 000552R         DEF AFN14      FUNCTION NO. 14
0336  00422           FNTBE EQU *          EFMP FUNCTION TABLE END
0337  00422 000016    MAXFN ABS FNTBE-FNTBS    MAX. FUNCTION NO.

0339  00423           MODNS EQU *          MODULE NUMBERS TABLE START
0340  00423 000037         DEC 31         FUNCTION NO.  1
0341  00424 000037         DEC 31         FUNCTION NO.  2
0342  00425 000037         DEC 31         FUNCTION NO.  3
0343  00426 000037         DEC 31         FUNCTION NO.  4
0344  00427 000037         DEC 31         FUNCTION NO.  5
0345  00430 000040         DEC 32         FUNCTION NO.  6
0346  00431 000037         DEC 31         FUNCTION NO. 7
0347  00432 000040         DEC 32         FUNCTION NO.  8
0348  00433 000040         DEC 32         FUNCTION NO.  9
0349  00434 000040         DEC 32         FUNCTION NO. 10
0350  00435 000041         DEC 33         FUNCTION NO. 11
0351  00436 000041         DEC 33         FUNCTION NO. 12
0352  00437 000040         DEC 32         FUNCTION NO. 13
0353  00440 000036         DEC 30         FUNCTION NO. 14
0354  00441           ERWDS EQU *          ERROR WORD POSITION IN EXEC CALL
0355  00441 000010         DEC 8          FUNCTION 1
0356  00442 000010         DEC 8          FUNCTION  2
0357  00443 000006         DEC 6          FUNCTION  3
0358  00444 000010         DEC 8          FUNCTION  4
0359  00445 000005         DEC 5          FUNCTION  5
0360  00446 000006         DEC 6          FUNCTION  6
0361  00447 000005         DEC 5          FUNCTION 7
0362  00450 000006         DEC 6          FUNCTION  8
0363  00451 000006         DEC 6          FUNCTION  9
0364  00452 000010         DEC 8          FUNCTION 10
0365  00453 000004         DEC 4          FUNCTION 11
0366  00454 000005         DEC 5          FUNCTION 12
0367  00455 000006         DEC 6          FUNCTION 13
0368  00456 000003         DEC 3          FUNCTION 14

0370  00457 000224    ARQCN ABS 224B
0371  00460 000537R   AARGC DEF ARGCT
0372  00461 000541R   ARQP1 DEF ARG1
0373  00462 000440R   AERWD DEF ERWDS-1
0374  00463 100403R   AFNTB DEF FNTBS-1,I
0375  00464 000422R   AMODN DEF MODNS-1
0376  00465 177760    MD16  DEC -16
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0377   00466 177764   MD12   DEC -12
0378   00041          MD10   EQU .-10
0379   00042          MD9    EQU .-9
0380   00043          MD8    EQU .-8
0381   00045          MD6    EQU .-6
0382   00046          MD5    EQU .-5
0383   00047          MD4    EQU .-4
0384   00050          MD3    EQU .-3
0385   00051          MD2    EQU .-2
0386   00052          MD1    EQU .-1
0387   00054          D1     EQU .+1
0388   00055          D2     EQU .+2
0389   00056          D3     EQU .+3
0390   00057          D4     EQU .+4
0391   00060          D5     EQU .+5
0392   00061          D6     EQU .+6
0393   00062          D7     EQU .+7
0394   00063          D8     EQU .+8
0395   00064          D9     EQU .+9
0396   00065          D10    EQU .+10
0397   00065          B12    EQU D10
0398   00467 000013   D11    DEC 11
0399   00467          B13    EQU D11
0400   00470 000016   D14    DEC 14
0401   00471 000014   D12    DEC 12
0402   00472 000017   D15    DEC 15
0403   00473 000021   D17    DEC 17
0404   00474 000024   D20    DEC 20
0405   00475 000027   D23    DEC 23
0406   00476 000030   D24    DEC 24
0407   00477 000033   D27    DEC 27
0408   00500 000034   D28    DEC 28
0409   00501 000036   D30    DEC 30
0410   00502 000144   D100   DEC 100
0411   00503 000177   D127   DEC 127
0412   00504 000200   D128   DEC 128
0413   00505 000310   D200   DEC 200
0414   00506 001747   D999   DEC 999
0415   00507 177720   MB60   OCT -60
0416   00510 000000   ENDSB  NOP            ADDRESS OF $BUF+127
0417   00511 144000   ENDTS  OCT 144000     END T/S +1
0418   00512 000011   MXWPE  DEC 9
0419   00513 000514R  AINVC  DEF INVCH
0420   00514 177400   INVCH  OCT 177400     INVALID CHAR
0421   00515 177400          OCT 177400     INVALID CHAR
0422   00516 177400          OCT 177400     INVALID CHAR
0423   00517 000020   WPOTE  DEC 16         WORDS/OPEN TABLE ENTRY
0424   00520 000000   FLNGH  OCT 0          TOTAL FILE LENGTH OF DOS-M FILE
0425   00521 000000   NOTRB  OCT 0          TEMP. RECORD BUFFER VALUES
0426   00522 000000   NSUWA  OCT 0          NO. SECT. USED IN WORK AREA
0427   00523 000000   WPTRB  OCT 0          WORDS/TRB
0428   00524 000000   NXPTL  OCT 0          NEXT AVAIL PACK NO. ENTRY IN OPE
0429   00525 000000   FTRBE  OCT 0          ADDR OF FIRST TRB ENTRY IN OPEN
0430   00526 000000   NXOTL  OCT 0          NEXT O.T. LOCATION
0431   00527 000000   NXTFP  OCT 0          NEXT FILE POSITION IN DIRECTORY
0432   00530 000000   OPNSZ  OCT 0          SIZE OF OPENED TABLE
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0433   00531 000000   OPNTE  OCT 0          ADDR. OF OPEN TABLE END
0434   00532 000000   OPNTB  OCT 0,0        ADDR. OF OPENED TABLE START
       00533 000000
0435   00533          OPNT1  EQU OPNTB+1
0436   00534 000000   STSWA  OCT 0          STARTING T/S OF WORK AREA
0437   00535 000000   TRBUF  OCT 0          ADDR. OF TEMP. RECORD BUFFER
0438   00536 000000   TRBSZ  OCT 0          SIZE OF TEMP. RECORD BUFFER

0440   00537 000000   ARGCT  OCT 0
0441   00540 000000   ARGRT  OCT 0
0442   00541 000000   ARG1   OCT 0
0443   00542 000000   ARG2   OCT 0
0444   00543 000000   ARG3   OCT 0
0445   00544 000000   ARG4   OCT 0
0446   00545 000000   ARG5   OCT 0
0447   00546 000000   ARG6   OCT 0
0448   00547 000000   ARG7   OCT 0
0449   00550 000000   ARG8   OCT 0
0450   00551 000000   EFRUN  OCT 0          EFMP RUNNING FLAG
```

```
0452*
0453*          POST FUNCTION
0454*
0455   00552 000553R AFN14 DEF FUN14
0456   00553          FUN14 EQU *
0457   00553 016154R        JSB CKVSU      CHECK IF VALID DEFINE PREVIOUSLY
0458   00554 016556R        JSB POST
0459   00555 026066R        JMP EFCON      RETURN TO USER



0461*
0462* POST ALL TRB
0463*
0464   00556 000000  POST   NOP            POST ALL TRB'S
0465   00557 062521R        LDA NOTRB      NO. OF TRB'S
0466   00560 003004         CMA,INA
0467   00561 072730R        STA POSTI      POST INDEX
0468   00562 066525R        LDB FTRBE      GET ADDR OF FIRST TRB
0469   00563          POSTM EQU *          POST MORE
0470   00563 016571R        JSB POSTW      POST WRITE
0471   00564 066724R        LDB POSTP      POINTER TO THIS TRB VECTOR
0472   00565 044056         ADB D3         BIAS TO NEXT TRB VECTOR
0473   00566 036730R        ISZ POSTI      FINISHED W/ TRB VECTORS
0474   00567 026563R        JMP POSTM      NO, POST MORE
0475   00570 126556R        JMP POST,I     RETURN



0477   00571 000000  POSTW  NOP            POST WRITE
0478   00572 076724R        STB POSTP      POST POINTER
0479   00573 006004         INB
0480   00574 076726R        STB POSTP+2    SAVE POINTER TO "MBW" FLAG
0481   00575 006004         INB
0482   00576 160001         LDA B,I        POINTER TO O.T. ENTRY
0483   00577 002003         SZA,RSS        FILE FOR THIS BUFFER?
0484   00600 126571R        JMP POSTW,I    NO, RETURN
0485   00601 164001         LDB B,I        PICK UP POINTER TO O.T. ENTRY
0486   00602 046471R        ADB D12
0487   00603 160001         LDA B,I        SUB CH.
0488   00604 072515R        STA GSC        SUB CH. FOR GENERAL R/W
0489   00605 006004         INB
0490   00606 160001         LDA B,I        PICK UP T/S CUR. IN TRB
0491   00607 002003         SZA,RSS        ANY SECT. IN CORE
0492   00610 126571R        JMP POSTW,I    NO, RETURN
0493   00611 162726R        LDA POSTP+2,I  "MUST BE WRITTEN" FLAG
0494   00612 002002         SZA            WRITE THIS TRB?
0495   00613 026616R        JMP *+3        YES
0496   00614 170001         STA B,I        CLEAR T/S CUR. IN CORE
0497   00615 126571R        JMP POSTW,I    RETURN
0498   00616 076725R        STB POSTP+1    SAVE POINTER
0499   00617 044041         ADB MD10
0500   00620 076727R        STB POSTP+3    SAVE ADDR. TO START T/S
0501   00621 006004         INB
0502   00622 160001         LDA B,I        FILE LENGTH
0503   00623 006004         INB
```

```
0504  00624 164001        LDB B,I
0505  00625 017226R       JSB MPY
0506  00626 017246R       JSB DIV
0507  00627 000504R       DEF D128
0508  00630 006002        SZB
0509  00631 002004        INA
0510  00632 070001        STA B
0511  00633 162727R       LDA POSTP+3,I START T/S
0512  00634 016356R       JSB T.STS
0513  00635 044000        ADB A          CALC. END "T/S" IN B
0514  00636 162725R       LDA POSTP+1,I CURRENT T/S
0515  00637 016356R       JSB T.STS
0516  00640 007004        CMB,INB
0517  00641 044000        ADB A          CALC. NO. SECT. TO END
0518  00642 074000        STB A
0519  00643 003004        CMA,INA        A = NO. SECT. TO END
0520  00644 046536R       ADB TRBSZ      CALC. ANY OVERFLOW
0521  00645 006020        SSB            MORE SECT. THAN BUFFERS?
0522  00646 062536R       LDA TRBSZ      YES, USE TRB SIZE
0523  00647 072516R       STA GNS        NO. SEC. FOR GENERAL R/W
0524  00650 162725R       LDA POSTP+1,I T/S CUR. IN CORE
0525  00651 166724R       LDB POSTP,I    ADDR. OF TRB
0526  00652 016510R       JSB GWTXX      GENERAL WRITE
0527  00653 002400        CLA
0528  00654 172725R       STA POSTP+1,I CLEAR T/S NO. CUR. IN TRB
0529  00655 172726R       STA POSTP+2,I CLEAR "MBW" FLAG
0530  00656 036726R       ISZ POSTP+2    POINT TO POINTER TO O.T.
0531  00657 166726R       LDB POSTP+2,I PICK UP POINTER TO O.T.
0532  00660 076725R       STB POSTP+1
0533  00661 172726R       STA POSTP+2,I CLEAR POINTER TO O.T.
0534  00662 044063        ADB D8
0535  00663 160001        LDA B,I        HIGHEST RECORD ACCESSED ON DISC
0536  00664 076727R       STB POSTP+3    SAVE POINTER TO "HRW" ON DISC
0537  00665 044062        ADB D7
0538  00666 003000        CMA
0539  00667 140001        ADA B,I        HIGHEST RECORD WRITTEN IN CORE
0540  00670 002020        SSA            UPDATE HIGHEST RECORD ACCESSED?
0541  00671 126571R       JMP POSTW,I    NO, NO UPDATE
0542  00672 044046        ADB MD5        BACK UP TO PACK NO. FIELD
0543  00673 160001        LDA B,I        PN000 ?
0544  00674 002003        SZA,RSS        YES
0545  00675 026720R       JMP PSTSC      POST FOR SYST. SUB CH.
0546  00676 066725R       LDB POSTP+1    GET OPEN TABLE ENTRY ADDR
0547  00677 046471R       ADB D12        INCREMENT TO SUBCHANNEL FIELD
0548  00700 160001        LDA B,I        GET THE SUBCHANNEL
0549  00701 073542R       STA PAKSC      STORE THE SUBCHANNEL
0550  00702 066726R       LDB POSTP+1    GET OPEN TABLE ENTRY ADDR
0551  00703 016553R       JSB GETDE      GET DIRECTORY ENTRY
0552  00704 066575R       LDB CNAME      GET DIRECTORY ENTRY ADDR
0553  00705 044063        ADB D8
0554  00706 076726R       STB POSTP+2    FILE POSITION FOR HIGH RCD. ACC.
0555  00707 066725R       LDB POSTP+1    START OF THIS OT ENTRY
0556  00710 046472R       ADB D15
0557  00711 164001        LDB B,I        HIGHEST RECORD ACCESSED IN CORE
0558  00712 176726R       STB POSTP+2,I UPDATE HI RCD.ACC. IN DISC-DIR.
0559  00713 176727R       STB POSTP+3,I UPDATE HI RCD.ACC. IN CORE-DIR.
```

```
0560   00714 002404          CLA,INA         WRITE SWITCH
0561   00715 067542R         LDB PAKSC       GET THE SUBCHANNEL
0562   00716 016765R         JSB PRWIO       WRITE BACK DIRECTORY ENTRY
0563   00717 126571R         JMP POSTW,I     RETURN
0564   00720           PSTSC EQU *
0565   00720 044056          ADB D3
0566   00721 160001          LDA B,I         HIGHEST RECORD WRITTEN IN CORE
0567   00722 172727R         STA POSTP+3,I   HIGHEST RECD. WRITTEN ON DISC
0568   00723 126571R         JMP POSTW,I     RETURN
0569   00724 000000  POSTP OCT 0,0,0,0      POST POSITION
       00725 000000
       00726 000000
       00727 000000
0570   00730 000000  POSTI OCT 0            POST INDEX
```

```
0572* MOVE - MOVE ARRAYS OF WORDS
0573* ENTER:
0574*          A = SOURCE ADDRESS
0575*          B = DESTINATION ADDRESS
0576*          MOVCT = (=) NO. WORDS TO MOVE
0577* EXIT:
0578*          NO. OF WORDS MOVED
0579*          A = END OF SOURCE ADDR.+1
0580*          B = END OF DESTINATION ADDR.+1
0581*
0582  00731 000000  MOVE  NOP            MOVE ARRAYS OF WORDS
0583  00732 072743R       STA MOVAD      SAVE ADDR. OF SOURCE ARRAY
0584  00733 162743R MOVMR LDA MOVAD,I    PICK UP WORD FORM SOURCE ARRAY
0585  00734 170001        STA B,I        PUT IT IN DESTINATION ARRAY
0586  00735 036743R       ISZ MOVAD      BUMP POINTERS
0587  00736 006004        INB
0588  00737 036744R       ISZ MOVCT      FINISHED?
0589  00740 026733R       JMP MOVMR      NO, MOVE MORE
0590  00741 062743R       LDA MOVAD      RET. W/ A AND B AT END OF ARRAYS
0591  00742 126731R       JMP MOVE,I     RETURN
0592  00743 000000  MOVAD OCT 0
0593  00744 000000  MOVCT OCT 0


0595* NAM0? - CHECK IF 1ST WD. OF NAME = 0 OR INVALID CHAR.
0596* ENTER:
0597*          A = ADDR. OF NAME
0598* EXIT:
0599*          A IS SAVED
0600*          NAME NOT EQUAL TO 0 OR INVALID CHAR
0601*
0602  00745 000000  NAM0? NOP            NAME = 0?
0603  00746 164000        LDB A,I        PICK UP 1ST TWO CHAR.
0604  00747 006003        SZB,RSS
0605  00750 016363R       JSB ER23
0606  00751 056514R       CPB INVCH      INVALID CHAR.?
0607  00752 016363R       JSB ER23       YES
0608  00753 126745R       JMP NAM0?,I    RETURN

0610* CRPN0 - CREATE PN000 IN WORK AREA
0611* ENTER:
0612*          VALUES FROM SRCDR
0613* EXIT:
0614*          PN000 CREATED
0615*          B IS SAVED
0616*
0617  00754 000000  CRPN0 NOP            CREATE PN000
0618  00755 076527R       STB NXTFP      SAVE NEXT FILE POSITION
0619  00756 017016R       JSB GTLTS      GET LAST T/S FOR SYST. DISC
0620  00757 016356R       JSB T,STS      T/S TO SECTORS
0621  00760 073015R       STA TMPTS      TEMP. STORAGE FOR NO. SECTORS
0622  00761 060160        LDA SYNTS      NEXT T/S FOR SYST. DISC.
0623  00762 067040R       LDB PNEAD      GET ADDR OF PACK NO. ENTRY
0624  00763 170001        STA B,I        STORE STARTING T/S IN PACK NO. E
0625  00764 072534R       STA STSWA      STORE STARTING T/S
```

```
0626  00765 016356R        JSB T,STS      T/S TO SECTORS
0627  00766 003004         CMA,INA
0628  00767 043015R        ADA TMPTS      CALC. NO. SECTORS IN WORK AREA
0629  00770 002003         SZA,RSS        ANY WORK AREA?
0630  00771 016355R        JSB ER17       NO, NO WORK AREA
0631  00772 002020         SSA            ANY WORK AREA?
0632  00773 016355R        JSB ER17       NO
0633  00774 073015R        STA TMPTS      SAVE LENGTH OF WORK AREA
0634  00775 072020R        STA NOSEC      FILE LENGTH FOR 'CKDSP'
0635  00776 067040R        LDB PNEAD      GET ADDR OF PACK NO. ENTRY
0636  00777 044054         ADB D1         INCREMENT TO SIZE FIELD
0637  01000 170001         STA B,I        STORE SIZE OF PN000 IN PACK NO.
0638  01001 006004         INB            INCREMENT TO DIRECTORY SIZE FIEL
0639  01002 060116         LDA SECTR      GET DIRECTORY SIZE
0001  01003 040052         ADA MD1
0002  01004 170001         STA B,I        STORE DIRECTORY SIZE IN PACK NO.
0003  01005 006004         INB            INCREMENT TO LSA FIELD
0004  01006 002400         CLA
0005  01007 170001         STA B,I        STORE LSA IN PACK NO. ENTRY
0006  01010 072522R        STA NSUWA      STORE LSA
0007  01011 060060         LDA D5         NO. OF WDS./ENTRY
0008  01012 017545R        JSB CKDSP      CHECK DIRECTORY SPACE
0009  01013 016366R        JSB ER24
0010  01014 126754R        JMP CRPN0,I    RETURN
0011  01015 000000  TMPTS  OCT 0          TEMP. T/S
```

```
0013* GTLTS - GET LAST T/S (FROM CORE)
0014* ENTER:
0015*         NO PARAMETERS
0016* EXIT:
0017*         A = LAST T/S
0018*
0019  01016 000000  GTLTS  NOP            GET LAST T/S FOR SYST. DISC
0020  01017 060101         LDA JBINS      JOB BINARY START
0021  01020 050052         CPA MD1        JOB BINARY PRESENT?
0022  01021 027027R        JMP USELT      NO, USE LAST TRACK
0023  01022 002003         SZA,RSS        JOB BINARY PRESENT?
0024  01023 027027R        JMP USELT      NO, USE LAST TRACK
0025  01024 060102         LDA JBINC      CURRENT JOB BINARY TRACK
0026  01025 012514R        AND INVCH      SAVE ONLY TRACK
0027  01026 127016R        JMP GTLTS,I    RETURN
0028  01027          USELT  EQU *          USE LAST TRACK
0029  01027 060154         LDA DISCO
0030  01030 010074         AND L8BT       SAVE ONLY TRACK NO.
0031  01031 002004         INA
0032  01032 001727         ALF,ALF        PUT T/S INTO POSITION
0033  01033 127016R        JMP GTLTS,I    RETURN
```

```
0035* CKPN  - CHECK PACK NO. FOR GREATER THAN 999.
0036* ENTER:
0037*         A= PACK NO. TO BE CHECKED
0038* EXIT:
```

```
0039*          B IS SAVED
0040*          P+1 = VALID P.N.
0041*               DPNO = PACK NO.
0042*          JMP ER15 IF INVALID P.N.
0043*
0044  01034 000000  CKPN  NOP             CHECK PACK NO.
0045  01035 072672R       STA DPNO       SAVE PACK NO.
0046  01036 002021        SSA,RSS
0047  01037 027043R       JMP CKPN1
0048  01040 050052        CPA MD1
0049  01041 002001        RSS
0050  01042 016352R       JSB ER15
0051  01043          CKPN1 EQU *
0052  01043 062672R       LDA DPNO       GET PACK NO.
0053  01044 002020        SSA            MAKE SURE P.N. IS (+)
0054  01045 002400        CLA
0055  01046 003004        CMA,INA
0056  01047 042506R       ADA D999
0057  01050 002020        SSA            TOO LARGE?
0058  01051 016352R       JSB ER15       YES
0059  01052 062672R       LDA DPNO       GET PACK NO.
0060  01053 127034R       JMP CKPN,I     RETURN


0062* CKNAP - CHECK NAME AND PACK NO.
0063* ENTER:
0064*          ARG3 = ADDR. OF FILE NAME
0065*          ARG4,I = PACK NO.
0066* EXIT:
0067*          A = PACK NO.
0068*
0069  01054 000000  CKNAP NOP             CHECK NAME AND PACK NO.
0070  01055 062543R       LDA ARG3       FNAME
0071  01056 016746R       JSB NAM0?      CHECK IF NAME = 0
0072  01057 162544R       LDA ARG4,I     PAKNO
0073  01060 017034R       JSB CKPN       CHECK PACK NO.
0074  01061 127054R       JMP CKNAP,I    RETURN


0076* SETD1 - SET UP FOR EFMP SEARCH
0077* EXIT:
0078*          B = ADDR OF NAME
0079*          TYPDR = 1(EFMP)
0080*          NOPAS = 0(COMPARE)
0081*
0082  01062 000000  SETD1 NOP
0083  01063 002400        CLA
0084  01064 073541R       STA NOPAS      COMPARE
0085  01065 002004        INA
0086  01066 073540R       STA TYPDR      EFMP SEARCH
0087  01067 066543R       LDB ARG3       FILE NAME ADDR
0088  01070 127062R       JMP SETD1,I    RETURN
```

```
0090* SETD2 - SET UP FOR DOSM SEARCH
0091* ENTER:
0092*         PAKSC = SUBCHANNEL
0093* EXIT:
0094*         A = TRK/SEC TO START SEARCH
0095*         TYPDR = 0(DOSM)
0096*         NOPAS = 0(COMPARE)
0097*
0098  01071 000000  SETD2 NOP
0099  01072 002400        CLA
0100  01073 073540R       STA TYPDR     DOSM SEARCH
0101  01074 073541R       STA NOPAS     COMPARE NAMES
0102  01075 067542R       LDB PAKSC     GET SUBCHANNEL
0103  01076 054155        CPB SYSSC     SYSTEM SUBCHANNEL ?
0104  01077 002001        RSS           YES
0105  01100 027104R       JMP CKSYS     NO
0106  01101 060115        LDA SYSBF     CALCULATE STARTING T/S FOR SYSTE
0107  01102 002004        INA
0108  01103 127071R       JMP SETD2,I   RETURN
0109  01104         CKSYS EQU *
0110  01104 002400        CLA
0111  01105 073533R       STA TRKIO
0112  01106 073534R       STA SECIO
0113  01107 016765R       JSB PRWIO     READ DISC LABEL INFORMATION
0114  01110 062542R       LDA ASBUF     GET LABEL ADDR
0115  01111 040056        ADA D3
0116  01112 067132R       LDB ALABL
0117  01113 016306R       JSB CMPAR     1ST FIVE CHAR'S = 'SYSTE' ?
0118  01114 027130R       JMP TR0S1     NO
0119  01115 066542R       LDB ASBUF     GET 6TH CHAR
0120  01116 044060        ADB D5
0121  01117 160001        LDA B,I
0122  01120 053135R       CPA EM        6TH CHAR = 'M' ?
0123  01121 002001        RSS           YES
0124  01122 027130R       JMP TR0S1     NO
0125  01123 066542R       LDB ASBUF     GET DIRECTORY T/S
0126  01124 044067        ADB D64
0127  01125 160001        LDA B,I
0128  01126 002004        INA
0129  01127 002001        RSS
0130  01130         TR0S1 EQU *
0131  01130 063136R       LDA TK0S1     DIRECTORY T/S IS 0/1
0132  01131 127071R       JMP SETD2,I   RETURN P+1
0133  01132 001133R ALABL DEF LABEL     LABEL ADDR
0134  01133 051531  LABEL ASC 1,SY      'SYSTEM'
0135  01134 051524        ASC 1,ST
0136  01135 042515  EM    ASC 1,EM
0137  00067         D64   EQU 67B
0138  01136 000001  TK0S1 OCT 00001
```

```
0140* GETPN - GET PACK NUMBER
0141* ENTER:
0142*         A = DESIRED PACK NUMBER
0143* EXIT:
0144*         P+1 = PACK NO. NOT AVAILABLE
0145*         P+2 = PACK NO  AVAILABLE
0146*               B = ADDR OF DIRECTORY ENTRY
0147*               PAKSC = SUBCHANNEL
0148*               TRKIO = TRACK OF DIRECTORY ENTRY
0149*               SECIO = SECTOR OF DIRECTORY ENTRY
0150  01137 000000  GETPN NOP
0151  01140 073254R       STA DESPN     SAVE DESIRED PACK NO.
0152  01141 002400        CLA
0153  01142 073253R       STA CHNCT     INITIALIZE CHANNEL COUNT TO 0
0154  01143 063241R       LDA ASUBC     ZERO SUBCHANNEL TABLE
0155  01144 064043        LDB MD8
0156  01145 077542R       STB PAKSC
0157  01146 006400        CLB
0158  01147          ZLOOP EQU *
0159  01147 174000        STB A,I
0160  01150 002004        INA
0161  01151 037542R       ISZ PAKSC
0162  01152 027147R       JMP ZLOOP
0163  01153 064161        LDB CUDSC     START SEARCH AT CURRENT
0164  01154 077542R       STB PAKSC          USER DISC
0165  01155          SRCH  EQU *
0166  01155 063240R       LDA ANOTP     RETURN ADDR FOR INACTIVE
0167  01156 070330        STA XFLG           SUBCHANNEL
0168  01157 067542R       LDB PAKSC     CALC. ADDR OF CURRENT ENTRY
0169  01160 047241R       ADB ASUBC          IN SUBCHANNEL
0170  01161 077242R       STB CSUBC
0171  01162 017071R       JSB SETD2     SET UP FOR DOSM DIRECTORY SEARCH
0172  01163 073255R       STA STSDS     SAVE DIRECTORY STARTING T/S
0173  01164 063254R       LDA DESPN     GET DESIRED PACK NUMBER
0174  01165 002020        SSA           IS IT A GENERAL PACK NUMBER(=1)
0175  01166 027174R       JMP SPNXX     YES
0176  01167 063254R       LDA DESPN     GET REQUESTED PACK NO.
0177  01170 067260R       LDB APNDE     CONVERSION OUTPUT FIELD
0178  01171 016577R       JSB CNVDA     CONVERT DECIMAL TO ASCII
0179  01172 067256R       LDB APNNO     GET ADDR OF SPECIFIC PACK NO
0180  01173 002001        RSS
0181  01174          SPNXX EQU *
0182  01174 067257R       LDB APNXX     GET ADDR OF GENERAL SEARCH NAME
0183  01175 063255R       LDA STSDS     GET DIRECTORY STARTING T/S
0184  01176 017267R       JSB SRCDR     SEARCH DIRECTORY
0185  01177          SRCRT EQU *
0186  01177 027202R       JMP NXCHN     PACK NOT FOUND, CONTINUE
0187  01200 037137R       ISZ GETPN     INCREMENT P+2
0188  01201 127137R       JMP GETPN,I   RETURN P+2
0189  01202          NXCHN EQU *
0190  01202 064156        LDB SCCNT
0191  01203 057253R       CPB CHNCT     ALL CHANNELS SEARCHED ?
0192  01204 127137R       JMP GETPN,I   YES, RETURN P+1
0193  01205 037253R       ISZ CHNCT     INCREMENT CHANNEL COUNT ?
0194  01206 137242R       ISZ CSUBC,I   MARK CHANNEL AS SEARCHED
0195  01207          TANCH EQU *
```

```
0238* SRCDR - SEARCH EITHER DOSM OR EFMP DIRECTORY
0239* ENTER:
0240*         A = STARTING T/S(DOSM ONLY)
0241*         B = ADDR OF FILE NAME
0242*         TYPDR   DIRECTORY TYPE(0=DOSM,1=EFMP)
0243*         NOPAS = COMPARE TYPE('-' = NO COMPARE,'+' = COMPARE)
0244*         PAKSC = PACK SUBCHANNEL
0245*         PNEAD = ADDR OF PACK NO, ENTRY(EFMP ONLY
0246*                 WITH STARTING T/S IN FIRST WORD)
0247* EXIT:
0248*         P+1 = FILE NOT FOUND
0249*               A = SECTOR NO, OF NEXT FILE
0250*               B = POINTER TO NEXT FILE NAME
0251*         P+2 = FILE FOUND/NO COMPARE PERFORMED
0252*               A = SECTOR NO, OF FILE
0253*               B = POINTER TO START OF DIRECTORY ENTRY
0254*               SECIO = SECTOR NO, OF DIRECTORY ENTRY
0255*               TRKIO = TRACK NO, OF DIRECTORY ENTRY
0256*               PACK NO, ENTRY INITIALIZED WITH DIRECTORY SIZE,
0257*               FILE SIZE, AND LAST SECTOR ALLOCATED
0258*
0259  01267 000000  SRCDR NOP
0260  01270 077537R       STB AFNAM     SAVE FILE NAME ADDRESS
0261  01271 006400        CLB
0262  01272 057540R       CPB TYPDR     DOSM SEARCH ?
0263  01273 002001        RSS           YES
0264  01274 163040R       LDA PNEAD,I   GET STARTING T/S
0265  01275 016753R       JSB PRETS     PREPARE T/S FOR I/O
0266  01276 060054        LDA D1        SECTOR COUNT OF 1
0267  01277 073535R       STA SECCT     INITIALIZE SECTOR COUNT
0268  01300         SRCNS EQU *
0269  01300 002400        CLA           READ OPERATION
0270  01301 067542R       LDB PAKSC     GET SUBCHANNEL
0271  01302 016765R       JSB PRWIO     READ NEXT DIRECTORY SECTOR
0272  01303 066542R       LDB A$BUF     START OF NEW SECTOR
0273  01304 077543R       STB $BUFP     INITIALIZE CURRENT ENTRY ADDRESS
0274  01305 063540R       LDA TYPDR     GET DIRECTORY TYPE
0275  01306 002003        SZA,RSS       EFMP ?
0276  01307 027337R       JMP CKEOD     NO
0277  01310 063535R       LDA SECCT     GET SECTOR COUNT
0278  01311 050054        CPA D1        FIRST SECTOR ?
0279  01312 002001        RSS           YES
0280  01313 027364R       JMP SRCNF     NO
0281  01314 067543R       LDB $BUFP     GET START OF EFMP'S DIRECTORY EN
0282  01315 044056        ADB D3        INCREMENT TO DIRECTORY SIZE FIEL
0283  01316 164001        LDB B,I       GET DIRECTORY SIZE
0284  01317 063040R       LDA PNEAD     GET PACK NO, ENTRY ADDR
0285  01320 040055        ADA D2        INCREMENT TO DIRECTORY SIZE FIEL
0286  01321 174000        STB A,I       STORE DIRECTORY SIZE IN PACK NO,
0287  01322 067543R       LDB $BUFP     GET START OF EFMP'S DIRECTORY EN
0288  01323 044057        ADB D4        INCREMENT TO EFMP FILE SIZE FIEL
0289  01324 164001        LDB B,I       GET EFMP FILE SIZE
0290  01325 040052        ADA MD1       BACK UP TO PACK NO, ENTRY FILE S
0291  01326 174000        STB A,I       STORE FILE SIZE IN PACK NO, ENTR
0292  01327 067543R       LDB $BUFP     GET START OF EFMP'S DIRECTORY EN
0293  01330 044063        ADB D8        INCREMENT TO LAST SECTOR ALLOCAT
```

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0294  01331 164001          LDB B,I         GET LAST SECTOR ALLOCATED
0295  01332 040055          ADA D2          INCREMENT TO PACK NO. ENTRY LSA
0296  01333 174000          STB A,I         STORE LSA IN PACK NO. ENTRY
0297  01334 067543R          LDB $BUFP       GET ADDR OF CURRENT ENTRY
0298  01335 044064          ADB D9          SIZE FO ENTRY
0299  01336 077543R          STB $BUFP       STORE NEW CURRENT ADDR
0300  01337           CKEOD EQU *
0301  01337 062510R          LDA ENDSB       GET ADDR OF END OF $BUF
0302  01340 002004          INA
0303  01341 053543R          CPA $BUFP       IS $BUF FULL ?
0304  01342 002001          RSS             YES
0305  01343 027354R          JMP SRCNF       NO
0306  01344 063535R          LDA SECCT       GET SECTOR COUNT
0307  01345 002004          INA
0308  01346 050116          CPA SECTR       PHYSICAL END OF DIRECTORY ?
0309  01347 002001          RSS             YES
0310  01350 027520R          JMP GETNS       NO
0311  01351 063535R          LDA SECCT       CURRENT SECTOR
0312  01352 067543R          LDB $BUFP       CURRENT BUFFER ADDR
0313  01353 127267R          JMP SRCDR,I     RETURN &+1
0314  01354           SRCNF EQU *
0315  01354 163543R          LDA $BUFP,I     GET NEXT DIRECTORY ENTRY
0316  01355 002002          SZA             END-OF-DIRECTORY ?
0317  01356 027362R          JMP CKEOS       NO
0318  01357 063535R          LDA SECCT       GET FILE SECTOR
0319  01360 067543R          LDB $BUFP       GET NEXT ENTRY ADDR
0320  01361 127267R          JMP SRCDR,I     RETURN P+1
0321  01362           CKEOS EQU *
0322  01362 050052          CPA MD1         END OF SECTOR ?
0323  01363 027520R          JMP GETNS       YES, GET NEXT SECTOR
0324  01364 063541R          LDA NOPAS       GET COMPARE SWITCH
0325  01365 002020          SSA             NO COMPARE
0326  01366 027510R          JMP SRET1       YES
0327  01367 063540R          LDA TYPDR       GET DIRECTORY TYPE
0328  01370 002002          SZA             EFMP ?
0329  01371 027504R          JMP CKEQN       YES, GO CHECK NAME
0330  01372 063537R          LDA AFNAM       GET REQUESTED FILE NAME ADDRESS
0331  01373 067257R          LDB APNXX       GET ADDRESS OF 'PNXXX' NAME
0332  01374 016306R          JSB CMPAR       REQUESTED FILE 'PNXXX' ?
0333  01375 027401R          JMP SETPK       NO
0334  01376 002400          CLA             GENERAL SEARCH INDICATOR
0335  01377 073536R          STA SPKSR       STORE INDICATOR
0336  01400 027410R          JMP CKNMT
0337  01401           SETPK EQU *
0338  01401 002404          CLA,INA         SPECIFIC SEARCH INDICATOR
0339  01402 073536R          STA SPKSR       STORE INDICATOR
0340  01403 063537R          LDA AFNAM       GET REQUESTED FILE NAME ADDRESS
0341  01404 067543R          LDB $BUFP       GET ADDRESS OF CURRENT DIRECTORY
0342  01405 016306R          JSB CMPAR       NAMES EQUAL ?
0343  01406 027423R          JMP GTNXE       NO
0344  01407 027436R          JMP CKINI       YES
0345  01410           CKNMT EQU *
0346  01410 067543R          LDB $BUFP       GET CURRENT DIRECTORY ADDR
0347  01411 160001          LDA B,I         GET FIRST TWO CHARS. OF FILE NAM
0348  01412 052032R          CPA PN          IS IT 'PN' ?
0349  01413 002001          RSS             YES
```

```
0350  01414 027423R        JMP GTNXE     NO,GET NEXT ENTRY
0351  01415 044054         ADB D1        INCREMENT TO THIRD CHAR OF PACK
0352  01416 060001         LDA B         GET ADDR IN A
0353  01417 016633R        JSB CNPND     CONVERT PACK NO. TO DECIMAL
0354  01420 027423R        JMP GTNXE     NOT A DECIMAL VALUE
0355  01421 002002         SZA           IS IT ZERO ?
0356  01422 027436R        JMP CKINI     NO
0357  01423           GTNXE EQU *
0358  01423 067543R        LDB $BUFP     GET CURRENT ENTRY ADDR.
0359  01424 044055         ADB D2        INCREMENT TO 'TYPE'
0360  01425 160001         LDA B,I       GET 'TYPE'
0361  01426 044056         ADB D3        INCREMENT TO NEXT ENTRY FOR SHOR
0362  01427 010073         AND L7BT      SAVE TYPE
0363  01430 003000         CMA
0364  01431 040061         ADA D6
0365  01432 002021         SSA,RSS       SHORT TYPE ?
0366  01433 044061         ADB D6        NO
0367  01434 077543R        STB $BUFP     SAVE NEW ENTRY POINTER
0368  01435 027337R        JMP CKEOD     SEARCH NEXT FILE
0369  01436           CKINI EQU *
0370  01436 067543R        LDB $BUFP     GET CURRENT ENTRY POINTER
0371  01437 044054         ADB D1        INCREMENT TO 2ND WORD OF NAME
0372  01440 160001         LDA B,I       GET 2ND WORD OF NAME
0373  01441 052033R        CPA PN+1      SECOND WORD OF NAME = ASCII ZERO
0374  01442 002001         RSS           YES
0375  01443 027460R        JMP NPN00     NO
0376  01444 044054         ADB D1        INCREMENT TO LAST CHAR OF NAME
0377  01445 160001         LDA B,I       GET LAST CHARACTER
0378  01446 010075         AND H8BT      CLEAR RIGHT BYTE
0379  01447 033544R        IOR ZMASK     INSERT ASCII ZERO IN RIGHT BYTE
0380  01450 052033R        CPA PN+1      PN000 ?
0381  01451 002001         RSS           YES
0382  01452 027460R        JMP NPN00     NO
0383  01453 160001         LDA B,I       GET TYPE FIELD
0384  01454 010073         AND L7BT      CLEAR MEANINGLESS BITS
0385  01455 050065         CPA B12       BINARY ?
0386  01456 027510R        JMP SRET1     YES
0387  01457 027423R        JMP GTNXE     NO
0388  01460           NPN00 EQU *
0389  01460 067543R        LDB $BUFP     GET ADDR OF ENTRY
0390  01461 044055         ADB D2        INCREMENT TO 'TYPE'
0391  01462 160001         LDA B,I       GET 'TYPE'
0392  01463 010073         AND L7BT      CLEAR MEANINGLESS BITS
0393  01464 050065         CPA B12       'BINARY' ?
0394  01465 027475R        JMP CKINF     YES
0395  01466 052467R        CPA B13       'ASCII' ?
0396  01467 002001         RSS           YES
0397  01470 027423R        JMP GTNXE     NO
0398  01471 166542R        LDB ARG2,I    GET EFMP CODE
0399  01472 054062         CPB D7        INITIALIZE FUNC. ?
0400  01473 016371R        JSB ER27      YES
0401  01474 027510R        JMP SRET1     NO
0402  01475           CKINF EQU *
0403  01475 166542R        LDB ARG2,I    GET EFMP CODE
0404  01476 054062         CPB D7        INITIALIZE FUNC. ?
0405  01477 027510R        JMP SRET1     YES
```

```
0406  01500 067536R        LDB SPKSR      GET PACK SEARCH SWITCH
0407  01501 002002         SZA            SEARCH FOR A SPECIFIC PACK ?
0408  01502 016374R         JSB ER28       YES
0409  01503 027423R         JMP GTNXE      NO
0410  01504           CKEQN EQU *
0411  01504 063537R         LDA AFNAM      GET ADDR OF REQUESTED NAME
0412  01505 067543R         LDB $BUFP      GET ADDR OF CURRENT ENTRY NAME
0413  01506 016306R         JSB CMPAR      NAMES EQUAL ?
0414  01507 027514R         JMP EBIAS      NO
0415  01510           SRET1 EQU *
0416  01510 063535R         LDA SECCT      SECTOR OF ENTRY
0417  01511 067543R         LDB $BUFP      GET DIRECTORY ENTRY ADDR
0418  01512 037267R         ISZ SRCDR      INCREMENT TO P+2
0419  01513 127267R         JMP SRCDR,I    RETURN TO P+2
0420  01514           EBIAS EQU *
0421  01514 067543R         LDB $BUFP      GET CURRENT ENTRY ADDR
0422  01515 046512R         ADB MXWPE      ADD ENTRY SIZE
0423  01516 077543R         STB $BUFP      STORE ADDR OF NEXT ENTRY
0424  01517 027354R         JMP SRCNF      SEARCH NEXT ENTRY
0425  01520           GETNS EQU *
0426  01520 037535R         ISZ SECCT      INCR SECTOR COUNT
0427  01521 037534R         ISZ SECIO       INCR SECTOR FOR I/O
0428  01522 063534R         LDA SECIO
0429  01523 050116          CPA SECTR      END OF TRACK ?
0430  01524 002001          RSS            YES
0431  01525 027300R         JMP SRCNS      NO
0432  01526 037533R         ISZ TRKIO      INCR TO NEXT TRACK
0433  01527 002400          CLA
0434  01530 073534R         STA SECIO      STORE NEW I/O SECTOR
0435  01531 027300R         JMP SRCNS      GET NEXT SECTOR
0436  01532 001533R ATRKI   DEF TRKIO
0437  01533 000000  TRKIO    BSS 1          I/O TRACK
0438  01534 000000  SECIO    BSS 1          I/O SECTOR
0439  01535 000000  SECCT    BSS 1          SECTOR COUNT
0440  01536 000000  SPKSR    BSS 1          SEARCH MODE(0=GENERAL,1=SPECIFIC
0441  01537 000000  AFNAM    BSS 1          FILE NAME ADDRESS
0442  01540 000000  TYPDR    BSS 1          DIRECTORY TYPE FLAG
0443  01541 000000  NOPAS    BSS 1          COMPARE SWITCH
0444  01542 000000  PAKSC    BSS 1          PACK SUBCHANNEL
0445  01543 000000  $BUFP    BSS 1          POINTER TO DIRECTORY ENTRY
0446  01544 000060  ZMASK    OCT 60         ASCII ZERO MASK
```

```
0448* CKDSP - CHECK FOR SUFFICIENT DIRECTORY SPACE
0449* ENTER:
0450*         A = SIZE OF DIRECTORY ENTRY TO CREATE
0451*         B = ADDR OF OPEN TABLE ENTRY OF FILE TO COPY
0452*             (ONLY IF CALLER IS 'COPY' FUNCTION)
0453*         NXTFP = ADDR OF NEXT FILE POSITION
0454*         SECCT = SECTOR OF NEXT FILE POSITION
0455*         PNEAD = ADDR OF PACK NO. ENTRY
0456*         PAKSC = CURRENT SUBCHANNEL
0457*         NOSEC = NO. SECTORS REQUIRED
0458* EXIT:
0459*         P+1 = NO SPACE
0460*               A = 0(NO FILE SPACE)
0461*                 = 1(NO DIRECTORY SPACE)
0462*         P+2 = DIRECTORY SPACE AVAILABLE
0463*               NEW EOD MARK INSERTED
0464*               DIRECTORY UPDATED
0465*               NEW ENTRY CREATED
0466*
0467  01545 000000  CKDSP NOP
0468  01546 072025R       STA DESIZ     SAVE DIRECTORY ENTRY SIZE
0469  01547 076026R       STB DEADR     SAVE OPEN TABLE ADDR
0470  01550 050060        CPA D5        PN000 ?
0471  01551 027645R       JMP CKRSC     YES
0472  01552 062527R       LDA NXTFP     GET ADDR OF NEXT FILE POSITION
0473  01553 040042        ADA MD9       BACK UP TO NAME OF PREVIOUS FILE
0474  01554 006400        CLB
0475  01555 154000        CPB A,I       EFMP'S OWN ENTRY ?
0476  01556 027645R       JMP CKRSC     YES, NO NEED TO CHECK LSA
0477  01557 062527R       LDA NXTFP     GET ADDR OF NEXT FILE POSITION
0478  01560 040047        ADA MD4       BACK UP TO PREVIOUS FILE'S RECOR
0479  01561 164000        LDB A,I       GET RECORD LENGTH
0480  01562 040052        ADA MD1       BACK UP TO PREVIOUS FILES SIZE
0481  01563 160000        LDA A,I       GET NO. OF RECORDS
0482  01564 017226R       JSB MPY
0483  01565 017246R       JSB DIV
0484  01566 000504R       DEF D128
0485  01567 006002        SZB
0486  01570 002004        INA
0487  01571 072021R       STA SECFL     SAVE SECTORS USED
0488  01572 062527R       LDA NXTFP     GET ADDR OF NEXT FILE POSITION
0489  01573 040045        ADA MD6       BACK UP TO STARTING SECTOR
0490  01574 066021R       LDB SECFL     GET SECTORS USED BY FILE
0491  01575 144000        ADB A,I       CALCULATE LAST SECTOR ALLOCATED
0492  01576 044052        ADB MD1
0493  01577 063040R       LDA PNEAD     GET PACK NO. ENTRY ADDR
0494  01600 040056        ADA D3        INCREMENT TO LAST SECTOR ALLOCAT
0495  01601 154000        CPB A,I       ARE LAST SECTOR ALLOCATED EQUAL
0496  01602 027645R       JMP CKRSC     YES
0497  01603 174000        STB A,I       NO, UPDATE PACK NO. ENTRY
0498  01604 002404        CLA,INA
0499  01605 053535R       CPA SECCT     IS EFMP'S OWN DIRECTORY ENTRY IN
0500  01606 027624R       JMP SUPS1     YES
0501  01607 063533R       LDA TRKIO     GET TRACK OF CURRENT ENTRY
0502  01610 072022R       STA STRKI     SAVE TRACK OF CURRENT ENTRY
0503  01611 063534R       LDA SECIO     GET SECTOR OF CURRENT ENTRY
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0504  01612 072023R        STA SSECI     SAVE SECTOR OF CURRENT ENTRY
0505  01613 016000R        JSB UPSC1     UPDATE SECTOR 1
0506  01614 062022R        LDA STRKI     GET TRACK OF CURRENT ENTRY
0507  01615 073533R        STA TRKIO     RESTORE THE TRACK
0508  01616 062023R        LDA SSECI     GET SECTOR OF CURRENT ENTRY
0509  01617 073534R        STA SECIO     RESTORE THE SECTOR
0510  01620 002400         CLA           READ SWITCH
0511  01621 067542R        LDB PAKSC     GET SUBCHANNEL
0512  01622 016765R        JSB PRWIO     RESTORE THE CURRENT ENTRY
0513  01623 027627R        JMP ESPC      GO CHECK FOR SPACE
0514  01624          SUPS1 EQU *
0515  01624 062024R        LDA AESPC     RETURN ADDR
0516  01625 072000R        STA UPSC1     STORE RETURN ADDR
0517  01626 026006R        JMP UPLSA     GO UPDATE LSA
0518  01627          ESPC  EQU *
0519  01627 063040R        LDA PNEAD     GET ADDR OF PACK NO. ENTRY
0520  01630 040056         ADA D3        INCREMENT TO LSA FIELD
0521  01631 164000         LDB A,I       GET LSA
0522  01632 007004         CMB,INB
0523  01633 040051         ADA MD2       BACK UP TO FILE LENGTH FIELD
0524  01634 144000         ADB A,I       CALCULATE SECOTRS UNUSED
0525  01635 076021R        STB SECFL     SAVE SECTORS REMAINING
0526  01636 062020R        LDA NOSEC     GET NO. OF SECTORS REQUESTED
0527  01637 003004         CMA,INA
0528  01640 042021R        ADA SECFL     CALCULATE SECTORS LEFT
0529  01641 002021         SSA,RSS       ENOUGH SPACE ?
0530  01642 027645R        JMP CKRSC     YES
0531  01643 002400         CLA           NO SPACE
0532  01644 127545R        JMP CKDSP,I   RETURN, P+1
0533  01645          CKRSC EQU *
0534  01645 062527R        LDA NXTFP     GET NEXT FILE POSITION ADDR
0001  01646 042025R        ADA DESIZ     ADD SIZE OF NEXT ENTRY
0002  01647 003004         CMA,INA       TWO'S COMPLEMENT
0003  01650 042510R        ADA ENDSB     CALCULATE SPACE AVAILABLE IN SEC
0004  01651 002004         INA
0005  01652 002021         SSA,RSS       SPACE AVAILABLE IN SECTOR ?
0006  01653 027665R        JMP BLDEN     YES
0007  01654 063040R        LDA PNEAD     GET PACK NO ENTRY ADDR
0008  01655 040055         ADA D2        INCREMENT TO DIRECTORY SIZE
0009  01656 164000         LDB A,I       GET DIRECTORY SIZE
0010  01657 007004         CMB,INB       TWO'S COMPLEMENT
0011  01660 047535R        ADB SECCT     CALCULATE SECTORS LEFT IN DIRECT
0012  01661 006002         SZB           PHYSICAL EOD ?
0013  01662 027720R        JMP CGEOD     NO
0014  01663 002404         CLA,INA       NO DIRECTORY SPACE
0015  01664 127545R        JMP CKDSP,I   NO, RETURN P+1
0016  01665          BLDEN EQU *
0017  01665 016047R        JSB PKDIR     CREATE DIRECTORY ENTRY
0018  01666 062025R        LDA DESIZ
0019  01667 042527R        ADA NXTFP
0020  01670 040052         ADA MD1
0021  01671 052510R        CPA ENDSB     SPACE IN SECTOR FOR EOD MARK ?
0022  01672 002001         RSS           NO
0023  01673 027773R        JMP WSBUF     YES
0024  01674 063535R        LDA SECCT
0025  01675 002004         INA
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0026  01676 053535R        CPA SECCT      PHYSICAL EOD ?
0027  01677 027773R        JMP WSBUF      YES
0028  01700 006400         CLB
0029  01701 176027R        STB ATBUF,I    STORE EOD MARKER
0030  01702 037534R        ISZ SECIO      WRITE EOD MARK ON NEXT SECTOR
0031  01703 062542R        LDA ASBUF
0032  01704 072030R        STA ASBSV      SAVE ADDR OF $BUF
0033  01705 066027R        LDB ATBUF
0034  01706 076542R        STB ASBUF      USE TEMPORARY BUFFER
0035  01707 067542R        LDB PAKSC      SUB CHANNEL FOR I/O
0036  01710 002404         CLA,INA        WRITE FLAG FOR I/O
0037  01711 016765R        JSB PRWIO      WRITE NEW EOD MARKER
0038  01712 063534R        LDA SECIO      RESTORE SECTOR NUMBER
0039  01713 040052         ADA MD1
0040  01714 073534R        STA SECIO
0041  01715 062030R        LDA ASBSV      RESTORE ADDR OF $BUF
0042  01716 072542R        STA ASBUF
0043  01717 027773R        JMP WSBUF      WRITE BACK NEW DIRECTORY ENTRY
0044  01720          CGEOD  EQU *
0045  01720 062025R        LDA DESIZ
0046  01721 042527R        ADA NXTFP
0047  01722 040052         ADA MD1
0048  01723 052510R        CPA ENDSB      ROOM IN SECTOR FOR EOS MARK ?
0049  01724 002001         RSS            NO
0050  01725 027730R        JMP EOSFL      YES
0051  01726 037534R        ISZ SECIO      INCR TO NEXT DIRECTORY SECTOR
0052  01727 027665R        JMP BLDEN      GO BUILD NEW DIRECTORY ENTRY
0053  01730          EOSFL  EQU *
0054  01730 064052         LDB MD1        END-OF-SECTOR INDICATOR
0055  01731 176527R        STB NXTFP,I    STORE INDICATOR
0056  01732 062542R        LDA ASBUF      GET CURRENT BUFFER ADDR
0057  01733 072030R        STA ASBSV      SAVE ADDR
0058  01734 066027R        LDB ATBUF      GET ADDR OF BUFFER FOR NEW ENTRY
0059  01735 076542R        STB ASBUF      STORE NEW WRITE ADDR
0060  01736 076527R        STB NXTFP      STORE ADDR FOR 'PKDIR'
0061  01737 016047R        JSB PKDIR      CREATE DIRECTORY ENTRY
0062  01740 037534R        ISZ SECIO      INCR SECTOR
0063  01741 067534R        LDB SECIO
0064  01742 054116         CPB SECTR      END-OF-TRACK ?
0065  01743 002001         RSS            YES
0066  01744 027750R        JMP WTBUF      NO
0067  01745 006400         CLB            SECTOR 0
0068  01746 077534R        STB SECIO      STORE NEW SECTOR
0069  01747 037533R        ISZ TRKIO      INCR TRACK
0070  01750          WTBUF  EQU *
0071  01750 067542R        LDB PAKSC      GET CURRENT SUBCHANNEL
0072  01751 002404         CLA,INA        WRITE INDICATOR
0073  01752 016765R        JSB PRWIO      WRITE NEW DIRECTORY SECTOR
0074  01753 066030R        LDB ASBSV      GET OLD BUFFER ADDR
0075  01754 076542R        STB ASBUF      RESTORE ADDR
0076  01755 006400         CLB
0077  01756 057534R        CPB SECIO      NEW ENTRY WRITTEN ON NEW TRACK
0078  01757 002001         RSS            YES
0079  01760 027770R        JMP DESEC      NO
0080  01761 064116         LDB SECTR      RESTORE TO PREVIOUS SECTOR
0081  01762 044052         ADB MD1
```

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0082  01763 077534R        STB SECIO
0083  01764 067533R        LDB TRKIO      RESTORE TO PREVIOUS TRACK
0084  01765 044052         ADB MD1
0085  01766 077533R        STB TRKIO
0086  01767 027773R        JMP WSBUF      WRITE SBUF
0087  01770           DESEC EQU *
0088  01770 067534R        LDB SECIO      RESTORE TO PREVIOUS SECTOR
0089  01771 044052         ADB MD1
0090  01772 077534R        STB SECIO
0091  01773           WSBUF EQU *
0092  01773 067542R        LDB PAKSC      GET CURRENT SUBCHANNEL
0093  01774 002404         CLA,INA        WRITE INDICATOR
0094  01775 016765R        JSB PRWIO      WRITE SBUF
0095  01776 037545R        ISZ CKDSP      P+2
0096  01777 127545R        JMP CKDSP,I    RETURN
0097  02000 000000  UPSC1  NOP
0098  02001 163040R        LDA PNEAD,I    GET T/S OF DIRECTORY START
0099  02002 016753R        JSB PRETS      PREPARE T/S FOR I/O
0100  02003 067542R        LDB PAKSC      GET SUBCHANNEL
0101  02004 002400         CLA            READ INDICATOR
0102  02005 016765R        JSB PRWIO      READ 1ST SECTOR OF DIRECTORY
0103  02006           UPLSA EQU *
0104  02006 067040R        LDB PNEAD      GET ADDR OF PACK NO, ENTRY
0105  02007 044056         ADB D3         INCREMENT TO LAST SECTOR ALLOCAT
0106  02010 160001         LDA B,I        GET LAST SECTOR ALLOCATED
0107  02011 066542R        LDB ASBUF      GET ADDR OF EFMP'S DIRECTORY ENT
0108  02012 044063         ADB D8         INCREMENT TO LAST SECTOR ALLOCAT
0109  02013 170001         STA B,I        STORE NEW LAST SECTOR ALLOCATED
0110  02014 067542R        LDB PAKSC      GET SUBCHANNEL
0111  02015 002404         CLA,INA        WRITE INDICATOR
0112  02016 016765R        JSB PRWIO      WRITE SBUF
0113  02017 126000R        JMP UPSC1,I
0114  02020 000000  NOSEC  BSS 1          FILE LENGTH IN SECTORS/END
0115  02021 000000  SECFL  BSS 1          SECTORS FOR THE FILE
0116  02022 000000  STRKI  BSS 1          SAVE FOR TRACK NUMBER
0117  02023 000000  SSECI  BSS 1          SAVE FOR SECTOR NUMBER
0118  02024 001627R AESPC  DEF ESPC
0119  02025 000000  DESIZ  BSS 1          DIRECTORY ENTRY SIZE
0120  02026 000000  DEADR  BSS 1          OPEN TABLE ENTRY ADDR
0121  02027 002035R ATBUF  DEF TBUFF      ADDR OF TEMP BUFFER
0122  02030 000000  ASBSV  BSS 1          SAVE FOR ASBUF
0123  02031 002032R APN00  DEF PN         ADDR OF 'PN000'
0124  02032 050116  PN     ASC 1,PN       PN000
0125  02033 030060         ASC 1,00
0126  02034 030212         OCT 030212
0127  02035 000000  TBUFF  BSS 10
```

```
0129* PKDIR - PACK DIRECTORY ENTRY
0130* ENTER:
0131*         DESIZ = SIZE OF DIRECTORY ENTRY
0132*         NXTFP = ADDR OF ENTRY TO CREATE
0133*         NOSEC = SIZE OF FILE IN SECTORS
0134*         PNEAD = ADDR OF PACK NO. ENTRY
0135*         DEADR = ADDR OF ENTRY TO COPY('COPY FUNCTION ONLY')
0136* EXIT:
0137*         P+1
0138*              DIRECTORY ENTRY CREATED
0139*
0140  02047 000000  PKDIR NOP
0141  02050 066025R       LDB DESIZ     GET DIRECTORY ENTRY SIZE
0142  02051 054060        CPB D5        PN000 ?
0143  02052 002001        RSS           YES
0144  02053 026104R       JMP CEFMP     NO
0145  02054 066527R       LDB NXTFP     GET NEW DIRECTORY ENTRY ADDR
0146  02055 062032R       LDA PN        STORE NAME 'PN000' AND ENTRY TYP
0147  02056 170001        STA B,I
0148  02057 006004        INB
0149  02060 062033R       LDA PN+1
0150  02061 170001        STA B,I
0151  02062 006004        INB
0152  02063 062034R       LDA PN+2
0153  02064 170001        STA B,I
0154  02065 006004        INB
0155  02066 060160        LDA SYNTS     GET STARTING T/S
0156  02067 170001        STA B,I       STORE STARTING T/S
0157  02070 006004        INB
0158  02071 062020R       LDA NOSEC     GET FILE LENGTH
0159  02072 170001        STA B,I       STORE FILE LENGTH
0160  02073 006004        INB
0161  02074 062025R       LDA DESIZ
0162  02075 042527R       ADA NXTFP
0163  02076 040052        ADA MD1
0164  02077 052510R       CPA ENDSB     IS SECTOR FULL ?
0165  02100 126047R       JMP PKDIR,I   YES
0166  02101 002400        CLA           GET EOD INDICATOR
0167  02102 170001        STA B,I       STORE EOD INDICATOR
0168  02103 126047R       JMP PKDIR,I   RETURN P+1
0169  02104         CEFMP EQU *
0170  02104 166542R       LDB ARG2,I    GET EFMP FUNCTION NUMBER
0171  02105 056471R       CPB D12       COPY ?
0172  02106 026166R       JMP CCOPY     YES
0173  02107 060051        LDA MD2       NO, WORDS TO MOVE
0174  02110 072744R       STA MOVCT     STORE NO.
0175  02111 062543R       LDA ARG3      ADDR. OF FILE NAME
0176  02112 066527R       LDB NXTFP     GET DESTINATION ADDR
0177  02113 016731R       JSB MOVE      MOVE 1ST 4 CHARS.
0178  02114 072213R       STA TMPTR     STORE NAME ADDR
0179  02115 162213R       LDA TMPTR,I   GET 3RD WORD OF NAME
0180  02116 010075        AND H8BT      SAVE ONLY 5TH CHAR
0181  02117 170001        STA B,I       STORE CHAR.
0182  02120 006004        INB
0183  02121 063040R       LDA PNEAD     GET PACK NO. ENTRY ADDR
0184  02122 040056        ADA D3        INCREMENT TO LSA FIELD
```

```
0185  02123 160000          LDA A,I        GET LAST SECTOR ALLOCATED
0186  02124 002004          INA            CALCULATE STARTING RELATIVE SECT
0187  02125 170001          STA B,I
0188  02126 006004          INB
0189  02127 162545R         LDA ARG5,I     FILE LENGTH
0190  02130 170001          STA B,I
0191  02131 006004          INB
0192  02132 162546R         LDA ARG6,I     RECORD LENGTH
0193  02133 170001          STA B,I
0194  02134 006004          INB
0195  02135 162547R         LDA ARG7,I     SECURITY CODE
0196  02136 170001          STA B,I
0197  02137 006004          INB
0198  02140 062547R         LDA ARG7
0199  02141 002004          INA
0200  02142 160000          LDA A,I
0201  02143 170001          STA B,I        USER STATUS
0202  02144 006004          INB
0203  02145 002400          CLA
0204  02146 170001          STA B,I        HIGHEST RECORD ACCESSED
0205  02147 006004          INB
0206  02150 170001          STA B,I        END-OF-DIRECTORY INDICATOR
0207  02151          STLSA  EQU *
0208  02151 063040R         LDA PNEAD      GET PACK NO, ENTRY ADDR
0209  02152 040056          ADA D3         INCREMENT TO LSA FIELD
0210  02153 066020R         LDB NOSEC      GET NO, OF SECTORS FOR THIS FILE
0211  02154 144000          ADB A,I        CALCULATE NEW LSA
0212  02155 174000          STB A,I        STORE NEW LSA
0213  02156 002404          CLA,INA
0214  02157 053535R         CPA SECCT      FIRST SECTOR IN CORE ?
0215  02160 002001          RSS            YES
0216  02161 126047R         JMP PKDIR,I    NO
0217  02162 062542R         LDA ASBUF      GET ADDR OF EFMP ENTRY
0218  02163 040063          ADA D8         INCREMENT TO LSA FIELD
0219  02164 174000          STB A,I        STORE NEW LSA IN EFMP ENTRY
0220  02165 126047R         JMP PKDIR,I
0221  02166          CCOPY  EQU *
0222  02166 060043          LDA MD8        NO, OF WORDS TO MOVE
0223  02167 072744R         STA MOVCT      STORE MOVE COUNT
0224  02170 062026R         LDA DEADR      GET DIRECTORY ENTRY ADDR
0225  02171 066527R         LDB NXTFP      GET NEXT FILE POS, ADDR
0226  02172 016731R         JSB MOVE       MOVE ENTRY
0227  02173 066527R         LDB NXTFP      GET NEXT FILE POS, ADDR
0228  02174 044056          ADB D3         INCREMENT TO STARTING SECTOR FIE
0229  02175 063040R         LDA PNEAD      GET ADDR OF PACK NO, ENTRY
0230  02176 040056          ADA D3         INCREMENT TO LSA FIELD
0231  02177 160000          LDA A,I        GET LSA
0232  02200 002004          INA            CALCULATE STARTING RELATIVE SECT
0233  02201 170001          STA B,I        STORE STARTING SECTOR
0234  02202 044060          ADB D5         INCREMENT TO HRA
0235  02203 062026R         LDA DEADR      GET OPEN TABLE ENTRY ADDR
0236  02204 042472R         ADA D15        INCREMENT TO HRA FIELD
0237  02205 160000          LDA A,I        GET HRA
0238  02206 170001          STA B,I        STORE HRA IN DIRECTORY ENTRY
0239  02207 006004          INB
0240  02210 002400          CLA
```

```
0241  02211 170001          STA B,I       SET EOD INDICATOR
0242  02212 026151R         JMP STLSA
0243  02213 000000  TMPTR   BSS 1
```

```
0245* CKOPN - CHECK OPEN TABLE
0246* ENTER:
0247*         B = ADDR. OF FILE NAME
0248* EXIT:
0249*         P+1 = FILE NAME NOT FOUND
0250*               A = (-) IF END OF TABLE
0251*               B = POINTER TO BEGINNING OF NEXT FILE NAME.
0252*         P+2 = FILE NAME FOUND
0253*               B = POINTER TO BEGINNING OF FILE NAME
0254*
0255  02214 000000  CKOPN NOP             CHECK OPEN TABLE
0256  02215 077537R       STB AFNAM       SAVE ADDR. OF FILE NAME
0257  02216 066533R       LDB OPNT1       START OF OPEN TABLE FILE ENTRIES
0258  02217         CKNOE EQU *           CHECK NEXT OPEN ENTRY
0259  02217 076236R       STB OPNTP       O.T. POINTER
0260  02220 060001        LDA B
0261  02221 003000        CMA
0262  02222 042526R       ADA NXOTL       NEXT O.T. LOCATION
0263  02223 002020        SSA             ANY MORE FILES OPEN?
0264  02224 126214R       JMP CKOPN,I     NO, RETURN
0265  02225 063537R       LDA AFNAM       ADDR. OF FILE NAME
0266  02226 016306R       JSB CMPAR       COMPARE FILE NAMES
0267  02227 026233R       JMP NOCPR       NAMES NOT EQUAL
0268  02230 036214R       ISZ CKOPN       P+2
0269  02231 066236R       LDB OPNTP       RESTORE CURRENT POINTER
0270  02232 126214R       JMP CKOPN,I     RETURN
0271  02233         NOCPR EQU *           NAMES DID NOT COMPARE
0272  02233 066236R       LDB OPNTP       POINTER TO LAST ENTRY
0273  02234 046517R       ADB WPOTE BIAS TO NEXT ENTRY IN O.T.
0274  02235 026217R       JMP CKNOE       CHECK NEXT OPEN ENTRY
0275  02236 000000  OPNTP OCT 0           OPEN TABLE POINTER
```

```
0278* CKCLM - CHECK CORE LIMITS
0279* ENTER:
0280*         A = STARTING ADDRESS OF CORE TO BE CHECKED.
0281*         B = LENGTH (IN WORDS) OF BUFFER TO BE CHECKED.
0282* EXIT:
0283*         B = SAME AS ENTRY
0284*         P+1 = INVALID BUFFER AREA.
0285*         P+2 = VALID BUFFER AREA.
0286*               A = STARTING ADDR. OF CORE TO BE CHECKED
0287*                   OR EFFECTIVE ADDR. IF ORIGINAL WAS INDIRECT.
0288*
0289  02237 000000  CKCLM NOP             CHECK CORE LIMITS
0290  02240         EFFA1 EQU *
0291  02240 002003        SZA,RSS         ERROR IF 0 OR 1
0292  02241 126237R       JMP CKCLM,I     0, SO ERROR
0293  02242 050054        CPA D1
0294  02243 126237R       JMP CKCLM,I     1, SO ERROR
0295  02244 001275        RAL,CLE,SLA,ERA
0296  02245 002001        RSS
0297  02246 026251R       JMP EFFAD       VALID, EFFECTIVE ADDR.
0298  02247 160000        LDA A,I         GET NEXT ADDR. IN INDIRECT CHAIN
0299  02250 026240R       JMP EFFA1        AND PROCESS IT.
0300  02251         EFFAD EQU *
0301  02251 072305R       STA CORAD       SAVE CORE ADDR.
0302  02252 003000        CMA
0303  02253 040254        ADA UMFWA       USER MEMORY FWA
0304  02254 002021        SSA,RSS         .GE. 1ST USER WORD?
0305  02255 126237R       JMP CKCLM,I     NO, RETURN
0306  02256 062305R       LDA CORAD
0307  02257 040001        ADA B           CALCULATE FINAL ADDR.
0308  02260 003004        CMA,INA
0309  02261 040100        ADA UMLWA       USER MEM. LAST WORD ADDR.
0310  02262 002020        SSA             TOO BIG?
0311  02263 126237R       JMP CKCLM,I     YES
0312  02264 062166R       LDA VALSU       VALID SETUP FLAG
0313  02265 002003        SZA,RSS         VALID SETUP?
0314  02266 026302R       JMP CKLMR       NO, CHECK-LIMIT RETURN
0315  02267 062305R       LDA CORAD       STARTING ADDR. OF BUFFER
0316  02270 003004        CMA,INA
0317  02271 042531R       ADA OPNTE       END OF OPEN TABLE BUFFER
0318  02272 002020        SSA             START .GT. END OF OPEN TABLE?
0319  02273 026302R       JMP CKLMR       YES, CHECK-LIMIT RETURN
0320  02274 062305R       LDA CORAD       STARTING ADDR. OF BUFFER
0321  02275 040001        ADA B           NO OF WDS. IN BUFFER
0322  02276 003004        CMA,INA
0323  02277 042532R       ADA OPNTB       START OF OPEN TABLE
0324  02300 002020        SSA             END .LE. START OF OPEN TABLE?
0325  02301 126237R       JMP CKCLM,I     NO, ERROR
0326  02302         CKLMR EQU *           CHECK-LIMIT RETURN
0327  02302 062305R       LDA CORAD
0328  02303 036237R       ISZ CKCLM       VALID BUFFER AREA
0329  02304 126237R       JMP CKCLM,I     RETURN
0330  02305 000000  CORAD OCT 0
```

```
0332* CMPAR - COMPARE FILE NAMES
0333* ENTER:
0334*         A = ADDRESS OF FILE NAME REQUESTED,
0335*         B = ADDRESS OF FILE NAME TO BE COMPARED,
0336* EXIT:
0337*         P+1 = NAMES DO NOT COMPARE
0338*         P+2 = NAMES COMPARE
0339*
0340  02306 000000  CMPAR NOP             COMPARE FILE NAMES
0341  02307 072340R       STA AFLNM       ADDR, OF FILE NAME
0342  02310 060046        LDA MD5         NUMBER OF CHARS TO COMPARE(-)
0343  02311 072342R       STA CPRNC       STORE COUNT
0344  02312 000040        CLE             RESET 1ST/2ND FLAG
0345  02313         COM2C EQU *
0346  02313 160001        LDA B,I         PICK UP 2 CHAR, IN WORD REQ,
0347  02314 002041        SEZ,RSS         LEFT CHAR?
0348  02315 001727        ALF,ALF         YES, SHIFT INTO POSITION
0349  02316 010074        AND L8BT        STRIP LOW 8 BITS
0350  02317 072341R       STA COM1C       SAVE TO COMPARE 1 CHAR,
0351  02320 162340R       LDA AFLNM,I     PICK UP 2 CHAR, IN WORD TO COMP,
0352  02321 002041        SEZ,RSS         LEFT CHAR?
0353  02322 001727        ALF,ALF         YES, SHIFT INTO POSITION
0354  02323 010074        AND L8BT        STRIP LOW 8 BITS
0355  02324 052341R       CPA COM1C       ARE 2 CHAR'S, EQUAL
0356  02325 002001        RSS             EQUAL SO FAR
0357  02326 126306R       JMP CMPAR,I     RETURN NAMES DO NOT COMPARE
0358  02327 036342R       ISZ CPRNC       FINISHED?
0359  02330 026333R       JMP *+3         NO
0360  02331 036306R       ISZ CMPAR       P+2
0361  02332 126306R       JMP CMPAR,I     RETURN
0362  02333 002241        SEZ,CME,RSS     CHECK 2ND CHAR,?
0363  02334 026313R       JMP COM2C       YES
0364  02335 036340R       ISZ AFLNM       BUMP POINTER TO REQUESTED NAME
0365  02336 006004        INB             BUMP POINTER TO NAME TO BE COMP,
0366  02337 026312R       JMP COM2C-1
0367  02340 000000  AFLNM OCT 0           ADDR, OF FILE NAME
0368  02341 000000  COM1C OCT 0           TEMP, FOR COMPARE 1 CHAR,
0369  02342 177773  CPRNC OCT -5          (-) NO, OF CHARS TO COMPARE
```

```
0371* ASDEC = ASCII TO DECIMAL CONVERSION
0372* ENTER:
0373*         A = ASCII CHAR TO BE CONVERTED IN LO 8 BITS;
0374* EXITS:
0375*         P+1 = NO. NOT BETWEEN 0 AND 9 INCLUSIVE
0376*         P+2 = VALID NUMBER
0377*               A = CONVERTED NUMBER
0378*
0379  02343 000000  ASDEC NOP           ASCII TO DEC. CONVERSION
0380  02344 010074        AND L8BT      SAVE ONLY RIGHT CHAR.
0381  02345 042507R       ADA M860      BIAS TO NO. 0
0382  02346 002020        SSA           IS NO. .GE. TO ZERO?
0383  02347 126343R       JMP ASDEC,I   NO, ERROR
0384  02350 040041        ADA MD10      BIAS FOR NO. 9
0385  02351 002021        SSA,RSS       LESS THAN 10?
0386  02352 126343R       JMP ASDEC,I   NO, ERROR
0387  02353 040065        ADA D10       RESTORE NO.
0388  02354 036343R       ISZ ASDEC     P+2
0389  02355 126343R       JMP ASDEC,I   RETURN
```

```
0391* T.STS - CONVERT TRACK/SECTOR TO SECTORS
0392* ENTER:
0393*         A = T/S TO BE CONVERTED
0394* EXIT:
0395*         A = TOTAL SECTORS
0396*         B IS SAVED
0397*
0398  02356 000000  T.STS NOP             T/S TO SECTORS
0399  02357 072375R       STA T.STM       SAVE T/S TO BE CONVERTED
0400  02360 076376R       STB T.STM+1     SAVE B FOR EXIT
0401  02361 010074        AND L8BT        STRIP SECT. NO.
0402  02362 072377R       STA T.STM+2     SAVE SECTOR NO.
0403  02363 062375R       LDA T.STM       T/S
0404  02364 001727        ALF,ALF         PUT TK. NO. IN LO 8 BITS
0405  02365 010074        AND L8BT        STRIP TK. NO.
0406  02366 064116        LDB SECTR
0407  02367 017226R       JSB MPY         CALC. TOTAL SECTORS/TRACK
0408  02370 006002        SZB             OVERFLOW?
0409  02371 016363R       JSB ER23        YES, INVALID ARGUEMENT
0410  02372 042377R       ADA T.STM+2     ADD REMAINING SECTORS
0411  02373 066376R       LDB T.STM+1     RESTORE B
0412  02374 126356R       JMP T.STS,I     RETURN
0413  02375 000000  T.STM OCT 0,0,0       TEMP. STORAGE
      02376 000000
      02377 000000

0415* STT.S - SECTORS TO TRACK/SECTOR
0416* ENTER:
0417*         A = TOTAL SECTORS TO BE CONVERTED
0418* EXIT:
0419*         A = TRACK/SECTOR
0420*         B IS SAVE
0421*
0422  02400 000000  STT.S NOP             SECT. TO T/S
0423  02401 076376R       STB T.STM+1     SAVE B FOR EXIT
0424  02402 006400        CLB
0425  02403 017246R       JSB DIV         CALC. NO. TRKS. PLUS REMAINDER
0426  02404 000116        DEF SECTR
0427  02405 102201        SOC             OVERFLOW?
0428  02406 016363R       JSB ER23        YES, ERROR SHOULD NOT OCCUR
0429  02407 001727        ALF,ALF         SAVE NO. TRACKS IN HI 8 BITS
0430  02410 040001        ADA B           INCLUDE NO. SECTORS
0431  02411 066376R       LDB T.STM+1     RESTORE B
0432  02412 126400R       JMP STT.S,I     RETURN
```

```
0434* STZ   - STORE ZEROS INTO A BUFFER (STSPC STORES SPACES)
0435* ENTER:
0436*         A = (-) NO. OF WORDS TO CLEAR
0437*         B = STARTING ADDR. OF 1ST WORD
0438* EXIT:
0439*         A = 0
0440*         B = POINTER TO END-OF-BUFFER + 1
0441*
0442  02413 000000  STZ    NOP             STORE ZEROS
0443  02414 072423R        STA STZX1       SAVE NO. WORDS TO MOVE,(-).
0444  02415 002400         CLA
0445  02416 170001         STA B,I         PACK W/ ZEROS
0446  02417 006004         INB             BUMP POINTER TO BUFFER
0447  02420 036423R        ISZ STZX1       FINISHED?
0448  02421 026416R        JMP *-3         NO
0449  02422 126413R        JMP STZ,I       RETURN
0450  02423 000000  STZX1  OCT 0           INDEX REG
```

```
0452* GRTXX - GENERAL READ FOR DISC TRACK X SECTOR X
0453* ENTER:
0454*         A = TRACK/SECTOR
0455*         B = ADDRESS OF BUFFER
0456*         GNS = NO. OF SECTORS TO MOVE
0457*         GSC = SUB CH.
0458* EXIT:
0459*         BUFFER TRANSFERRED FROM DISC
0460*
0461  02424 000000  GRTXX NOP             GENERAL READ TRACK X SECT. X
0462  02425 076470R       STB GBUF        SAVE BUFFER LOC.
0463  02426 064054        LDB REQCD       READ REQUEST CODE
0464  02427 016431R       JSB GRWSU       GENERAL R/W SETUP
0465  02430 126424R       JMP GRTXX,I     RETURN

0467  02431 000000  GRWSU NOP             GENERAL R/W SETUP
0468  02432 076520R       STB REQC        SAVE REQUEST CODE
0469  02433 072467R       STA DRWBF       PACK T/S
0470*  CHECK TO INSURE T/S DOES NOT OVERFLOW
0471  02434 016356R       JSB T,STS
0472  02435 042516R       ADA GNS         CALC. LAST TK. TO BE ACCESSED
0473  02436 003004        CMA,INA
0474  02437 072471R       STA DRWBF+2     SAVE TEMPORARILY
0475  02440 060116        LDA SECTR       SECT./TK.
0476  02441 066505R       LDB D200
0477  02442 017226R       JSB MPY         CALC. ABSOLUTE SECTORS
0478  02443 066516R       LDB GNS         NO. SECT. TO TRANSFER
0479  02444 042471R       ADA DRWBF+2     CALC. OVERFLOW IF ANY
0480  02445 002020        SSA             OVERFLOW?
0481  02446 044000        ADB A           YES, TRANSFER UP TO MAX AVAILABL
0482  02447 062504R       LDA D128        WORDS/SECT.
0483  02450 017226R       JSB MPY         CALC. NO. WDS. TO TRANSFER
0484  02451 006002        SZB             OVERFLOW?
0485  02452 016363R       JSB ER23        YES
0486  02453 002020        SSA
0487  02454 016363R       JSB ER23
0488  02455 072471R       STA DRWBF+2     NO. WORDS TO TRANSFER
0489  02456 066515R       LDB GSC         SUB CH. TO BE USED
0490  02457 016472R       JSB CKDRI       CHECK DRIVE
0491  02460 062466R       LDA ADRWB       ADDR OF R/W BUFFER
0492  02461 066520R       LDB REQC        REQUEST CODE
0493  02462 000000        OCT 0           FOR DEBUGGING
0494  02463 016003X       JSB $DISC
0495  02464 000000        OCT 0           FOR DEBUGGING
0496  02465 126431R       JMP GRWSU,I     RETURN
0497  02466 002467R ADRWB DEF DRWBF
0498  02467         DRWBF EQU *           DISC R/W BUFF.
0499  02467 000000        OCT 0           DISC T/S
0500  02470 000000  GBUF  OCT 0           ADDR. OF I/O BUFF.
0501  02471 000000        OCT 0           WORD COUNT

0503* CKDRI - CHECK DRIVE NO.
0504* ENTER:
0505*         B = DESIRED SUB CH.
0506* EXIT:
0507*         CUDSC PACKED
```

```
0508*         CRFLG SET IF NECESSARY
0509*         CUDLA SET IF NECESSARY
0510  02472 000000  CKDRI NOP             CHECK DRIVE
0511  02473 060161         LDA CUDSC      CURRENT SUB CH.
0512  02474 000000         OCT 0          FOR DEBUGGING
0513  02475 074161         STB CUDSC      CUR. USER DISC SUB CH.
0514  02476 054155         CPB SYSSC      SYSTEM SUB CH?
0515  02477 002001         RSS            YES
0516  02500 034162         ISZ CRFLG      SET DVR FLAG TO USER DISC
0517  02501 001100         ARS            CALC. DRIVE NO.
0518  02502 005100         BRS            CALC. DRIVE NO.
0519  02503 050001         CPA B          SAME DRIVE?
0520  02504 026507R        JMP *+3        YES
0521  02505 060074         LDA LBBT       NO
0522  02506 070163         STA CUDLA      FORCE LAST T/S TO BE MAX
0523  02507 126472R        JMP CKDRI,I


0525* GWTXX - GENERAL WRITE FOR DISC TRACK X SECTOR X
0526* ENTER:
0527*         SAME AS GRTXX
0528* EXIT:
0529*         SAME AS GRTXX
0530*
0531  02510 000000  GWTXX NOP             GENERAL WRITE TRACK X SECT. X
0532  02511 076470R        STB GBUF       SAVE BUFFER LOC.
0533  02512 064055         LDB REQCD+1    WRITE REQUEST CODE
0534  02513 016431R        JSB GRWSU      GENERAL R/W SETUP
0535  02514 126510R        JMP GWTXX,I    RETURN
0536  02515 000000  GSC    OCT 0          SUB CH. FOR GENERAL R/W
0537  02516 000000  GNS    OCT 0,0        NO. SECT, NO. WORDS TO XFER
      02517 000000
0538  02520 000000  REQC   OCT 0          REQUEST CODE
```

```
0540* RTXSX - READ TRACK X SECTOR X INTO SBUF.
0541* ENTER:
0542*         TRKIO = TRACK NO.
0543*         SECIO = SECTOR NO.
0544* EXIT:
0545*         TK X SEC X PUT INTO SBUF.
0546*
0547  02521 000000  RTXSX NOP           READ TK X SECT X
0548  02522 067533R       LDB TRKIO     GET TRACK NO.
0549  02523 005727        BLF,BLF       PUT TK. NO. IN HI BITS
0550  02524 076467R       STB DRWBF
0551  02525 064054        LDB REQCD     READ
0552  02526          RTSXX EQU *
0553  02526 063534R       LDA SECIO     GET SECTOR NO.
0554  02527 032467R       IOR DRWBF     PACK SECT. NO.
0001  02530 072467R       STA DRWBF     SAVE T/S
0002  02531 062542R       LDA ASBUF     ADDR. OF I/O BUFF.
0003  02532 072470R       STA DRWBF+1
0004  02533 062504R       LDA D128      WORDS/SECT.
0005  02534 072471R       STA DRWBF+2
0006  02535 062466R       LDA ADRWB     ADDR. OF CALL BUFFER
0007  02536 016003X       JSB $DISC
0008  02537 002400        CLA
0009  02540 070330        STA XFLG      CLEAR INVALID SUB CH. FLAG RETUR
0010  02541 126521R       JMP RTXSX,I   RETURN
0011  02542 000001X ASBUF DEF SBUF
0012  00054          REQCD EQU D1


0014* WTXSX - WRITE TRACK X SECTOR X FROM SBUF
0015* ENTER:
0016*         TRKIO = TRACK NO.
0017*         SECIO = SECTOR NO.
0018* EXIT:
0019*         TRACK X SECTOR X ON DISC FROM SBUF
0020*
0021  02543 000000  WTXSX NOP           WRITE TK. X SECT. X
0022  02544 067533R       LDB TRKIO     GET TRACK NUMBER
0023  02545 005727        BLF,BLF       PUT TK. NO. IN HI 8 BITS
0024  02546 076467R       STB DRWBF     SAVE IT TEMP.
0025  02547 066543R       LDB WTXSX
0026  02550 076521R       STB RTXSX     PACK RETURN ADDR.
0027  02551 064055        LDB REQCD+1   WRITE
0028  02552 026526R       JMP RTSXX
```

```
0030*GETDE - GET DIRECTORY ENTRY
0031* ENTER:
0032*         B = ADDR OF OPEN TABLE ENTRY
0033* EXIT:
0034*         CNAME = ADDR OF DIRECTORY ENTRY
0035*         TRKIO = TRACK OF DIRECTORY SECTOR
0036*         SECIO = SECTOR OF DIRECTORY ENTRY
0037*
0038  02553 000000  GETDE NOP
0039  02554 076576R       STB ANAME     SAVE ADDR OF NAME
0040  02555 044064        ADB D9        INCREMENT TO DIREC ENT T/S FIELD
0041  02556 160001        LDA B,I       GET DIREC ENTRY T/S
0042  02557 016753R       JSB PRETS     PREPARE T/S FOR I/O
0043  02560 067542R       LDB PAKSC     GET SUBCHANNEL
0044  02561 002400        CLA           READ SWITCH
0045  02562 016765R       JSB PRWIO     READ DIRECTORY SECTOR
0046  02563 066542R       LDB A$BUF     GET ADDR OF $BUF
0047  02564 076575R       STB CNAME     STORE IT
0048  02565         NDIRE EQU *
0049  02565 062576R       LDA ANAME     GET ADDR OF FILE NAME
0050  02566 016306R       JSB CMPAR     EQUAL TO CURRENT ENTRY ?
0051  02567 002001        RSS           NO
0052  02570 126553R       JMP GETDE,I   YES, RETURN
0053  02571 066575R       LDB CNAME     GET ADDR OF CURRENT ENTRY
0054  02572 044064        ADB D9        INCREMENT TO NEXT ENTRY
0055  02573 076575R       STB CNAME     STORE NEW ADDR
0056  02574 026565R       JMP NDIRE     CONTINUE
0057  02575 000000  CNAME BSS 1         ADDR OF ENTRY
0058  02576 000000  ANAME BSS 1         ADDR OF DESIRED FILE NAME


0060* CNVDA - CONVERT DECIMAL TO ASCII
0061* ENTER:
0062*         A = DECIMAL VALUE TO CONVERT(0-999)
0063*         B = ADDR OF ASCII OUTPUT
0064* EXIT:
0065*         FIRST 3 BYTES OF ADDR GIVEN IN B = ASCII VALUE
0066  02577 000000  CNVDA NOP
0067  02600 072630R       STA DECVL     SAVE DECIMAL VALUE
0068  02601 076631R       STB ASCVL     SAVE ADDR OF OUTPUT
0069  02602 006400        CLB           CLEAR HI DIVIDEND
0070  02603 017246R       JSB DIV       DIVIDE BY 100
0071  02604 000502R       DEF D100
0072  02605 076630R       STB DECVL     SAVE REMAINDER
0073  02606 032632R       IOR AMASK     CONVERT QUOTIENT TO ASCII(100'S)
0074  02607 001727        ALF,ALF
0075  02610 172631R       STA ASCVL,I   STORE 1ST ASCII CHARACTER(100'S)
0076  02611 006400        CLB           CLEAR HI DIVIDEND
0077  02612 062630R       LDA DECVL     INIT LO DIVIDEND
0078  02613 017246R       JSB DIV       DIVIDE BY 10
0079  02614 000065        DEF D10
0080  02615 076630R       STB DECVL     SAVE REMAINDER
0081  02616 032632R       IOR AMASK     CONVERT QUOTIENT TO ASCII(10'S)
0082  02617 122631R       XOR ASCVL,I
0083  02620 172631R       STA ASCVL,I   STORE 2ND ASCII CHARACTER(10'S)
```

```
0084  02621 062630R        LDA DECVL      GET REMAINDER(1'S)
0085  02622 032632R        IOR AMASK      CONVERT TO ASCII CHARACTER
0086  02623 001727          ALF,ALF
0087  02624 066631R        LDB ASCVL
0088  02625 044054          ADB D1
0089  02626 170001          STA B,I        STORE 3RD ASCII CHARACTER(1'S)
0090  02627 126577R        JMP CNVDA,I    RETURN
0091  02630 000000  DECVL BSS 1           DECIMAL VALUE SAVE AREA
0092  02631 000000  ASCVL BSS 1           ADDR OF OUTPUT AREA
0093  02632 000060  AMASK OCT 60          MASK FOR CONVERSION


0095* CNPND - CONVERT PACK NUMBER TO DECIMAL
0096* ENTER:
0097*     A = ADDR OF 3RD CHAR OF PACK NAME
0098* EXIT:
0099*         P+1 = NOT DECIMAL
0100*         P+2 = DECIMAL
0101*               A = DECIMAL PACK NO.
0102*               DPNO = DECIMAL PACK NO.
0103*
0104  02633 000000  CNPND NOP
0105  02634 072671R        STA PNADR      SAVE ADDR OF PACK NO.
0106  02635 160000        LDA A,I        GET FIRST CHAR
0107  02636 001727          ALF,ALF
0108  02637 016343R        JSB ASDEC      CONVERT TO DECIMAL
0109  02640 126633R        JMP CNPND,I    RETURN P+1
0110  02641 072672R        STA DPNO       STORE RESULT
0111  02642 162671R        LDA PNADR,I    GET 2ND CHAR
0112  02643 016343R        JSB ASDEC      CONVERT TO DECIMAL
0113  02644 126633R        JMP CNPND,I  RETURN P+1
0114  02645 072673R        STA DECPN      SAVE RESULT
0115  02646 062672R        LDA DPNO       CALCULATE INTERMEDIATE RESULT
0116  02647 064065          LDB D10
0117  02650 017226R        JSB MPY
0118  02651 042673R        ADA DECPN
0119  02652 072672R        STA DPNO       SAVE INTERMEDIATE RESULT
0120  02653 066671R        LDB PNADR      GET 3RD CHAR
0121  02654 044054          ADB D1
0122  02655 160001          LDA B,I
0123  02656 001727          ALF,ALF
0124  02657 016343R        JSB ASDEC      CONVERT TO DECIMAL
0125  02660 126633R        JMP CNPND,I  RETURN P+1
0126  02661 072673R        STA DECPN      SAVE RESULT
0127  02662 062672R        LDA DPNO       CALCULATE FINAL RESULT
0128  02663 064065          LDB D10
0129  02664 017226R        JSB MPY
0130  02665 042673R        ADA DECPN
0131  02666 072672R        STA DPNO       SAVE RESULT
0132  02667 036633R        ISZ CNPND      P+2
0133  02670 126633R        JMP CNPND,I    RETURN
0134  02671 000000  PNADR BSS 1           ADDR OF PACK NO.
0135  02672 000000  DPNO  BSS 1           DECIMAL TOTAL
0136  02673 000000  DECPN BSS 1           DECIMAL VALUE
```

```
0191* SFSTS - STORE FIRST T/S OF THE FILE
0192* ENTER:
0193*         A = ADDR OF OPEN TABLE ENTRY(REL SECTOR OFFSET IN 4TH WORD
0194*         PNEAD = ADDR OF PACK NO. ENTRY
0195*
0196* EXIT:
0197*         STARTING T/S STORED IN OPEN TABLE ENTRY
0198*
0199  02740 000000  SFSTS NOP
0200  02741 072737R       STA OTEAD      SAVE OPEN TABLE ENTRY ADDR
0201  02742 163040R       LDA PNEAD,I    GET STARTING T/S OF PCAK NO.
0202  02743 016356R       JSB T.STS      CONVERT TO SECTORS
0203  02744 066737R       LDB OTEAD      GET OPEN TABLE ENTRY ADDR
0204  02745 044056        ADB D3         INCREMENT TO SECTOR FIELD
0205  02746 140001        ADA B,I        ADD REL SECTOR OFFSET
0206  02747 040052        ADA MD1        ADJUST TO STARTING REL SECTOR
0207  02750 016400R       JSB STT,S      CONVERT TO T/S
0208  02751 170001        STA B,I        STORE STARTING T/S IN OPEN TABLE
0209  02752 126740R       JMP SFSTS,I    RETURN


0211*PRETS - PREPARE TRACK/SECTOR
0212*ENTER:
0213*         A = TRACK/SECTOR
0214*EXIT:
0215*         TRKIO = TRACK NO.
0216*         SECIO = SECTOR NO.
0217  02753 000000  PRETS NOP
0218  02754 072764R       STA TSTMP      SAVE THE T/S
0219  02755 001727        ALF,ALF        SHIFT TRACK NO. TO RIGHT MOST BY
0220  02756 010074        AND L8BT       ZERO LEFT MOST BYTE
0221  02757 073533R       STA TRKIO      STORE TRACK NUMBER
0222  02760 062764R       LDA TSTMP      GET THE T/S
0223  02761 010074        AND L8BT       ZERO LEFT MOST BYTE
0224  02762 073534R       STA SECIO      STORE SECTOR NUMBER
0225  02763 126753R       JMP PRETS,I    RETURN
0226  02764 000000  TSTMP OCT 0          TEMPORARY


0228*PRWIO - PREPARE FOR READ/WRITE
0229*ENTER:
0230*         A = 0(READ)/1(WRITE)
0231*         B = SUBCHANNEL NO.
0232*EXIT:
0233*         TRK X SEC X ON DISC FROM $BUF
0234  02765 000000  PRWIO NOP
0235  02766 073001R       STA RWSWH      SAVE READ/WRITE SWITCH
0236  02767 054155        CPB SYSSC      SYSTEM SUBCHANNEL
0237  02770 002001        RSS            YES
0238  02771 016472R       JSB CKDRI      NO, CHECK THE DRIVE
0239  02772 067001R       LDB RWSWH      GET READ/WRITE SWITCH
0240  02773 006002        SZB            READ ?
0241  02774 026777R       JMP WXX        NO
0242  02775 016521R       JSB RTXSX      YES, READ THE RECORD
```

```
0243  02776 126765R        JMP PRWIO,I    RETURN
0244  02777          WXX   EQU *
0245  02777 016543R        JSB WTXSX      WRITE THE RECORD
0246  03000 126765R        JMP PRWIO,I    RETURN
0247  03001 000000  RWSWH  OCT 0          TEMPORARY



0249* CKPNT - CHECK FOR AN AVAILABLE ENTRY OR AN EXISTING ENTRY
0250* ENTER:
0251*          A = 0(CHECK FOR AN AVIALABLE ENTRY)
0252*            = 1(CHECK FOR AN EXISTING ENTRY)
0253*          B = PACK NO.(IGNORED IF A IS NOT 1)
0254* EXIT:
0255*          P+1 = NO ENTRY AVAILABLE/NO ENTRY FOUND
0256*          P+2 = ENTRY FOUND/ENTRY AVAILABLE
0257*                PNEAD = ADDR OF FOUND/AVAILABLE ENTRY
0258*                PAKSC = PACK SUBCHANNEL OF FOUND ENTRY
0259*
0260  03002 000000  CKPNT NOP
0261  03003 002002        SZA            CHECK FOR AN AVAILABLE ENTRY
0262  03004 027013R       JMP CKEXE      NO
0263  03005 066524R       LDB NXPTL      GET NEXT AVAILABLE ENTRY ADDR
0264  03006 056525R       CPB FTRBE      END OF PACK NO. ENTRIES ?
0265  03007 127002R       JMP CKPNT,I    YES, RETURN P+1
0266  03010 077040R       STB PNEAD      NO, STORE NEXT ENTRY ADDR
0267  03011 037002R       ISZ CKPNT      P+2
0268  03012 127002R       JMP CKPNT,I    RETURN
0269  03013          CKEXE EQU *
0270  03013 062533R       LDA OPNT1      GET START OF OPEN TABLE FILE ENT
0271  03014          CKXPN EQU *
0272  03014 052526R       CPA NXOTL      END OF OPEN TABLE ACTIVE ENTRIES
0273  03015 127002R       JMP CKPNT,I    YES, RETURN P+1
0274  03016 040065        ADA D10        INCREMENT TO PACK NO.
0275  03017 154000        CPB A,I        EQUAL TO REQUESTED PACK NO. ?
0276  03020 027023R       JMP PNFND      YES
0277  03021 040061        ADA D6         INCREMENT TO NEXT ENTRY
0278  03022 027014R       JMP CKXPN      CONTINUE SEARCH
0279  03023          PNFND EQU *
0280  03023 040055        ADA D2         INCREMENT TO SUBCHANNEL FIELD
0281  03024 164000        LDB A,I        GET SUBCHANNEL
0282  03025 077542R       STB PAKSC      STORE PACK SUBCHANNEL
0283  03026 040041        ADA MD10       BACK UP TO PACK NO. ENTRY NO. FI
0284  03027 164000        LDB A,I        GET PACK NO. ENTRY NO.
0285  03030 060001        LDA B          TRANSFER TO 'A' FOR 'AND'
0286  03031 010074        AND L8BT       CLEAR MEANINGLESS BITS
0287  03032 064057        LDB D4
0288  03033 017226R       JSB MPY        CALC. OFFSET
0289  03034 042532R       ADA OPNTB      CALCULATE ENTRY ADDR
0290  03035 073040R       STA PNEAD      STORE PACK NO ENTRY ADDRESS
0291  03036 037002R       ISZ CKPNT      P+2
0292  03037 127002R       JMP CKPNT,I    RETURN
0293  03040 000000  PNEAD BSS 1     PACK NO. ENTRY ADDR
```

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0295* MVPNT - MOVE PACK NO, TABLE
0296* ENTER:
0297*          A = OFFSET IN LO 8 BITS OF PACK NO, ENTRY
0298*              WHICH HAS HAD AN OPEN TABLE FILE ENTRY DELETED
0299* EXIT:
0300*          UPDATED PACK NO, TABLE(IF NEEDED)
0301*
0302  03041 000000  MVPNT NOP
0303  03042 010074        AND L8BT       CLEAR LEFT BYTE
0304  03043 073140R       STA OFFST      SAVE PACK NO, OFFSET
0305  03044 066533R       LDB OPNT1      GET FIRST OPEN TABLE ENTRY
0306  03045         NXOTE EQU *
0307  03045 056526R       CPB NXOTL      END OF ENTRIES
0308  03046 027056R       JMP UPNTB      YES
0309  03047 044055        ADB D2         INCREMENT TO PACK NO, OFFSET
0310  03050 160001        LDA B,I        GET PACK NO, OFFSET
0311  03051 010074        AND L8BT       CLEAR LEFT BYTE
0312  03052 053140R       CPA OFFST      EQUAL TO OFFSET OF DELETED FILE
0313  03053 127041R       JMP MVPNT,I    YES, RETURN
0314  03054 046470R       ADB D14        NEXT OPEN TABLE ENTRY
0315  03055 027045R       JMP NXOTE      CONTINUE
0316  03056         UPNTB EQU *
0317  03056 063140R       LDA OFFST      GET DELETED OFFSET
0318  03057 073141R       STA OFFS1      STORE IT
0319  03060 064057        LDB D4
0320  03061 017226R       JSB MPY
0321  03062 042532R       ADA OPNTB
0322  03063         UNXEN EQU *
0323  03063 040057        ADA D4         INCREMENT TO NEXT ENTRY
0324  03064 052524R       CPA NXPTL      END OF PACK NO, ENTRIES ?
0325  03065 027134R       JMP UNXPT      YES
0326  03066 073142R       STA SVPNA      SAVE PACK NO, ENTRY ADDR
0327  03067 064000        LDB A          SAVE ADDR OF CURRENT ENTRY TO MO
0328  03070 044047        ADB MD4        BACK TO FIRST WORD OF NEW ENTRY
0329  03071 077143R       STB NEADR      STORE ADDR OF NEW ENTRY
0330  03072         MNXWD EQU *
0331  03072 164000        LDB A,I        MOVE WORD
0332  03073 177143R       STB NEADR,I
0333  03074 067143R       LDB NEADR      INCREMENT TO NEXT WORD
0334  03075 044054        ADB D1
0335  03076 077143R       STB NEADR
0336  03077 057142R       CPB SVPNA      ENTRY MOVED ?
0337  03100 027103R       JMP UDONE      YES
0338  03101 040054        ADA D1         INCREMENT TO NEXT WORD
0339  03102 027072R       JMP MNXWD      MOVE NEXT WORD
0340  03103         UDONE EQU *
0341  03103 067140R       LDB OFFST      GET DELETED OFFSET
0342  03104 044054        ADB D1         INCREMENT
0343  03105 077141R       STB OFFS1      SAVE OFFSET TO CHANGE
0344  03106 066533R       LDB OPNT1      GET START OF OPEN TABLE FILE ENT
0345  03107         CNXOT EQU *
0346  03107 056526R       CPB NXOTL      END OF OPEN TABLE ENTRIES
0347  03110 027127R       JMP CKMPN      YES
0348  03111 044055        ADB D2         INCREMENT TO PACK NO, OFFSET
0349  03112 160001        LDA B,I        GET PACK NO,
0350  03113 010074        AND L8BT       CLEAR LEFT BYTE
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0351   03114 053141R          CPA OFFS1      OFFSETS EQUAL ?
0352   03115 002001          RSS            YES
0353   03116 027125R          JMP INXOT      NO
0354   03117 160001          LDA B,I        GET PACK NO.
0355   03120 010075          AND H8BT       CLEAR RIGHT BYTE
0356   03121 170001          STA B,I        STORE
0357   03122 063140R          LDA OFFST      GET NEW OFFSET
0358   03123 120001          XOR B,I
0359   03124 170001          STA B,I        STORE NEW OFFSET
0360   03125           INXOT EQU *
0361   03125 046470R          ADB D14        INCREMENT TO NEXT OPEN TABLE ENT
0362   03126 027107R          JMP CNXOT      GO CHECK NEXT ENTRY
0363   03127           CKMPN EQU *
0364   03127 063140R          LDA OFFST      GET OFFSET TO CHANGE
0365   03130 040054          ADA D1         INCREMENT
0366   03131 073140R          STA OFFST      STORE
0367   03132 063142R          LDA SVPNA      GET PACK NO. ENTRY ADDR.
0368   03133 027063R          JMP UNXEN      CONTINUE
0369   03134           UNXPT EQU *
0370   03134 062524R          LDA NXPTL      UPDATE NEXT PACK NO. ENTRY ADDR
0371   03135 040047          ADA MD4
0372   03136 072524R          STA NXPTL
0373   03137 127041R          JMP MVPNT,I    RETURN
0374   03140 000000  OFFST BSS 1            OFFSET TO CHANGE
0375   03141 000000  OFFS1 BSS 1            NEW OFFSET
0376   03142 000000  SVPNA BSS 1            CURRENT PACK NO. ENTRY ADDR
0377   03143 000000  NEADR BSS 1            NEW ENTRY ADDR


0379* SVPNS - SAVE ARGUEMENTS FOR PACK NO. SEARCH
0380* EXIT:   SEARCH ARGUMENTS SAVED
0381*
0382   03144 000000  SVPNS NOP
0383   03145 060042          LDA MD9        NO. OF WORDS TO SAVE
0384   03146 072744R          STA MOVCT      SAVE MOVE COUNT
0385   03147 063532R          LDA ATRKI      ADDR OF ARGUMENTS TO SAVE
0386   03150 067153R          LDB ASRCS      ADDR OF SAVE AREA
0387   03151 016731R          JSB MOVE       SAVE THE ARGUMENTS
0388   03152 127144R          JMP SVPNS,I    RETURN P+1
0389   03153 003154R ASRCS DEF SRCSV         ADDR OF SAVE AREA
0390   03154 000000  SRCSV BSS 9            SAVE AREA


0392* REPNS - RESTORE ARGUMENTS FOR PACK NO. SEARCH
0393* EXIT:   SEARCH ARGUMENTS RESTORED
0394*
0395   03165 000000  REPNS NOP
0396   03166 060042          LDA MD9        NO. OF WORDS TO RESTORE
0397   03167 072744R          STA MOVCT      SAVE MOVE COUNT
0398   03170 063153R          LDA ASRCS      GET ADDR OF SOURCE
0399   03171 067532R          LDB ATRKI      GET ADDR OF RESTORE AREA
0400   03172 016731R          JSB MOVE       RESTORE THE ARGUMENTS
0401   03173 002400          CLA            READ
0402   03174 067542R          LDB PAKSC      GET THE SUBCHANNEL
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0403  03175 016765R        JSB PRWIO      RESTORE $BUF
0404  03176 127165R        JMP REPNS,I    RETURN P+1


0406* EXIT:
0407*          A = CHECKSUM
0408*
0409  03177 000000  CKSUM NOP
0410  03200 066532R        LDB OPNTB      GET START OF OPEN TABLE(1ST PN E
0411  03201 003400         CCA            START AT -1
0412  03202           PNLOP EQU *
0413  03202 056524R        CPB NXPTL      END OF PN ENTRIES ?
0414  03203 027207R        JMP SUMOE      YES
0415  03204 120001         XOR B,I        COMPUTE CHECK SUM
0416  03205 044054         ADB D1         INCREMENT TO NEXT CHECK SUM WORD
0417  03206 027202R        JMP PNLOP      CHECK FOR END OF PN ENTRIES
0418  03207           SUMOE EQU *
0419  03207 066533R        LDB OPNT1      GET START OF OPEN TABLE ENTRIES
0420  03210           DELOP EQU *
0421  03210 056526R        CPB NXOTL      END OF OPEN TABLE ENTRIES ?
0422  03211 127177R        JMP CKSUM,I    YES
0423  03212 044055         ADB D2         INCREMENT TO FIRST CHECK SUM WOR
0424  03213 120001         XOR B,I        COMPUTE CHECK SUM
0425  03214 006004         INB            INCREMENT TO NEXT CHECK SUM WORD
0426  03215 120001         XOR B,I        COMPUTE CHECK SUM
0427  03216 044061         ADB D6         INCREMENT TO SECOND CHECK SUM WO
0428  03217 120001         XOR B,I        COMPUTE CHECK SUM
0429  03220 006004         INB            INCREMENT TO NEXT CHECK SUM WORD
0430  03221 120001         XOR B,I        COMPUTE CHECK SUM
0431  03222 044055         ADB D2         INCREMENT TO NEXT CHECK SUM WORD
0432  03223 120001         XOR B,I        COMPUTE CHECK SUM
0433  03224 044057         ADB D4         INCREMENT TO NEXT OPEN TABLE ENT
0434  03225 027210R        JMP DELOP      NO
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0436* MPY - MULTIPLY TWO SIXTEEN BIT NUMBERS
0437* ENTER :
0438*          A = MULTIPLICAND
0439*          B = MULTIPLIER
0440*
0441* EXIT :
0442*          A = LEAST SIGNIF. VALUE
0443*          B = MOST SIGNIF. VALUE
0444*
0445  03226 000000  MPY    NOP
0446  03227 073244R        STA MPYTM      SAVE MULTIPLICAND
0447  03230 062465R        LDA MD16       MAX NO. OF SHIFTS
0448  03231 073245R        STA MPYX1
0449  03232 002400         CLA            INITIALIZE PRODUCT
0450  03233           NXTBT EQU *
0451  03233 000066         CLE,ELA
0452  03234 005600         ELB
0453  03235 002140         SEZ,CLE
0454  03236 043244R        ADA MPYTM
0455  03237 002040         SEZ
0456  03240 006004         INB
0457  03241 037245R        ISZ MPYX1
0458  03242 027233R        JMP NXTBT
0459  03243 127226R        JMP MPY,I
0460  03244 000000  MPYTM  OCT 0          TEMP. STORAGE
0461  03245 000000  MPYX1  OCT 0          INDEX REG.


0463* DIV - DIVIDE A 32 BIT NUMBER BY A 16 BIT NUMBER
0464* ENTER:
0465*          A = LEAST SIGNIF. VALUE OF DIVIDEND
0466*          B = MOST SIGNIF. VALUE OF DIVIDEND
0467*          CONTENTS OF 'DIV' = ADDR OF ADDR OF DIVISOR
0468*
0469* EXIT:
0470*          A = QUOTIENT
0471*          B = REMAINDER
0472*          RETURN P+2
0473*
0474  03246 000000  DIV    NOP
0475  03247 077331R        STB TEMPP      SAVE HI DIVIDEND
0476  03250 167246R        LDB DIV,I      GET ADDR OF DIVISOR
0477  03251 164001         LDB 1,I        GET DIVISOR
0478  03252 037246R        ISZ DIV        BUMP RETURN
0479  03253 006003         SZB,RSS        ZERO DIVISOR
0480  03254 027327R        JMP OVFLO      YES
0481  03255 006120         CLE,SSB        SET B TO ABS AND E TO SIGN
0482  03256 007204         CMB,CME,INB
0483  03257 077332R        STB PLUSD      STORE POSITIVE DIVISOR
0484  03260 007004         CMB,INB
0485  03261 077333R        STB MIND       STORE NEGATIVE DIVISOR
0486  03262 067334R        LDB M16
0487  03263 077335R        STB COUNT      INITIALIZE COUNTER
0488  03264 064051         LDB MD2
0489  03265 077336R        STB SIGNN
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0490   03266 077337R          STB RSIGN      INITIALIZE SIGNS
0491   03267 067331R          LDB TEMPP
0492   03270 006021           SSB,RSS        TEST DIVIDEND SIGN
0493   03271 027277R          JMP DIV1       POSITIVE
0494   03272 037337R          ISZ RSIGN      SET REMAINDER SIGN NEGATIVE
0495   03273 007200           CMB,CME      COMPLEMENT THE DOUBLE LENGTH
0496   03274 002002           SZA            DIVIDEND AND E BIT
0497   03275 003005           CMA,INA,RSS
0498   03276 006004           INB
0499   03277 002040  DIV1     SEZ            TEST QUOTIENT SIGN
0500   03300 037336R          ISZ SIGNN      IF NEG SET SIGN TO SAY NEG QUOT
0501   03301 047333R          ADB MIND       OVERFLOW ?
0502   03302 006021           SSB,RSS
0503   03303 027327R          JMP OVFLO
0504   03304 047332R          ADB PLUSD
0505   03305 000066  LOOP     CLE,ELA        SHIFT
0506   03306 005600           ELB
0507   03307 047333R          ADB MIND       TEST
0508   03310 006021           SSB,RSS
0509   03311 002005           INA,RSS        DIVIDE O. K. ?
0510   03312 047332R          ADB PLUSD      NO DIVIDE
0511   03313 037335R          ISZ COUNT      ANY MORE ?
0512   03314 027305R          JMP LOOP       YES
0513   03315 003006           CMA,INA,SZA    SET QUOTIENT TO NEGATIVE
0514   03316 002020           SSA            AND MAKE SURE
0515   03317 002001           RSS            THERE IS NO OVERFLOW
0516   03320 027327R          JMP OVFLO      OVERFLOW
0517   03321 103101           CLO
0518   03322 037336R          ISZ SIGNN      IF POSITIVE
0519   03323 003004           CMA,INA        TWO'S COMPLEMENT
0520   03324 037337R          ISZ RSIGN      TWST FOR CORRECT QUOTIENT
0521   03325 127246R          JMP DIV,I
0522   03326 007005           CMB,INB,RSS
0523   03327 102101  OVFLO    STF 1          SET OVERFLOW BIT
0524   03330 127246R          JMP DIV,I      RETURN
0525   03331 000000  TEMPP    BSS 1
0526   03332 000000  PLUSD    BSS 1
0527   03333 000000  MIND     BSS 1
0528   03334 177760  M16      DEC -16
0529   03335 000000  COUNT    BSS 1
0530   03336 000000  SIGNN    BSS 1
0531   03337 000000  RSIGN    BSS 1
0532                          END
** NO ERRORS*
```

```
$BUF    00005/01 00011/04

$BUFP   00445/02 00273/02 00281/02 00287/02 00292/02 00297/02 00299/02
        00303/02 00312/02 00315/02 00319/02 00341/02 00346/02 00350/02
        00367/02 00370/02 00389/02 00412/02 00417/02 00421/02 00423/02

$CLER   00009/01 00188/01

$DISC   00007/01 00494/03 00007/04

$EX30   00048/01 00004/01

$MDLD   00006/01 00109/01

$SYIO   00008/01 00192/01

$WAIT   00008/01 00198/01

.       00024/01 00378/01 00379/01 00380/01 00381/01 00382/01 00383/01
        00384/01 00385/01 00386/01 00387/01 00388/01 00389/01 00390/01
        00391/01 00392/01 00393/01 00394/01 00395/01 00396/01

.CUDS   00166/01 00082/01 00152/01 00204/01

.UDNT   00165/01 00080/01 00150/01 00202/01

@       00025/01 00029/01 00030/01 00031/01 00032/01 00033/01 00034/01
        00035/01 00036/01 00037/01 00038/01 00039/01 00040/01 00041/01
        00042/01 00043/01 00044/01 00045/01 00046/01

A       00022/01 00101/01 00119/01 00226/01 00230/01 00513/01 00517/01
        00518/01 00603/01 00159/02 00204/02 00286/02 00291/02 00296/02
        00475/02 00479/02 00481/02 00491/02 00495/02 00497/02 00521/02
        00524/02 00009/03 00185/03 00200/03 00211/03 00212/03 00219/03
        00231/03 00237/03 00298/03 00481/03 00106/04 00149/04 00152/04
        00173/04 00275/04 00281/04 00284/04 00327/04 00331/04

A$BSV   00122/03 00032/03 00041/03 00057/03 00074/03

A$BUF   00011/04 00015/01 00055/01 00060/01 00114/02 00119/02 00125/02
        00272/02 00031/03 00034/03 00042/03 00056/03 00059/03 00075/03
        00107/03 00217/03 00002/04 00046/04

AARGC   00371/01 00077/01

ABNO    00211/01 00199/01 00207/01

ABORT   00187/01 00186/01 00216/01

ADABR   00186/01 00070/01

ADRWB   00497/03 00491/03 00006/04

AERWD   00373/01 00094/01
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AESPC 00118/03 00515/02

AFLNM 00367/03 00341/03 00351/03 00364/03

AFN14 00455/01 00335/01

AFNAM 00441/02 00260/02 00330/02 00340/02 00411/02 00256/03 00265/03

AFNTB 00374/01 00102/01

AINVC 00419/01 00012/01

ALABL 00133/02 00116/02

AMASK 00093/04 00073/04 00081/04 00085/04

AMODN 00375/01 00099/01

ANAME 00058/04 00039/04 00049/04

ANOTP 00221/02 00166/02

APN00 00123/03 00016/01

APNDE 00230/02 00177/02

APNNO 00228/02 00179/02

APNXX 00229/02 00182/02 00331/02

ARG1 00442/01 00372/01

ARG2 00443/01 00083/01 00093/01 00100/01 00103/01 00131/01 00398/02
00403/02 00170/03

ARG3 00444/01 00070/02 00087/02 00175/03

ARG4 00445/01 00072/02

ARG5 00446/01 00189/03

ARG6 00447/01 00192/03

ARG7 00448/01 00195/03 00198/03

*ARG8 00449/01

ARGCT 00440/01 00095/01 00371/01

ARGRT 00441/01 00117/01 00147/01

ARQCN 00370/01 00074/01

ARQP1 00372/01 00014/01

ASDEC 00379/03 00383/03 00386/03 00388/03 00389/03 00108/04 00112/04
00124/04

ASRCR 00220/02 00215/02

ASRCS 00389/04 00386/04 00398/04

ASUBC 00222/02 00154/02 00169/02 00202/02

ASUBT 00239/01 00225/01

ATBUF 00121/03 00029/03 00033/03 00058/03

ATRKI 00436/02 00385/04 00399/04

B 00023/01 00096/01 00104/01 00106/01 00123/01 00125/01 00229/01
00318/01 00482/01 00485/01 00487/01 00490/01 00496/01 00502/01
00504/01 00510/01 00535/01 00539/01 00543/01 00548/01 00557/01
00566/01 00585/01 00624/01 00637/01 00002/02 00005/02 00121/02
00127/02 00283/02 00289/02 00294/02 00347/02 00352/02 00369/02
00372/02 00377/02 00383/02 00391/02 00106/03 00109/03 00147/03
00150/03 00153/03 00156/03 00159/03 00167/03 00181/03 00187/03
00190/03 00193/03 00196/03 00201/03 00204/03 00206/03 00233/03
00238/03 00241/03 00260/03 00307/03 00321/03 00346/03 00430/03
00445/03 00519/03 00041/04 00089/04 00122/04 00177/04 00186/04
00187/04 00205/04 00208/04 00285/04 00310/04 00349/04 00354/04
00356/04 00358/04 00359/04 00415/04 00424/04 00426/04 00428/04
00430/04 00432/04

B12 00397/01 00385/02 00393/02

B13 00399/01 00395/02

BLDEN 00016/03 00006/03 00052/03

CCOPY 00221/03 00172/03

CEFMP 00169/03 00144/03

CGEOD 00044/03 00013/03

CHNCT 00225/02 00153/02 00191/02 00193/02 00211/02

CKCLM 00289/03 00121/01 00262/01 00292/03 00294/03 00305/03 00311/03
00325/03 00328/03 00329/03

CKDRI 00510/03 00490/03 00523/03 00238/04

CKDSP 00467/02 00261/01 00008/02 00532/02 00015/03 00095/03 00096/03

CKEOD 00300/02 00276/02 00368/02

CKEOS 00321/02 00317/02

CKEXE 00269/04 00262/04

CKINF 00402/02 00394/02

CKINI 00369/02 00344/02 00356/02

CKLMR 00326/03 00314/03 00319/03

CKMPN 00363/04 00347/04

CKNAP 00069/02 00249/01 00074/02

CKNMT 00345/02 00336/02

CKNOE 00258/03 00274/03

CKOPN 00255/03 00258/01 00264/03 00268/03 00270/03

CKPN 00044/02 00247/01 00060/02 00073/02

CKPN1 00051/02 00047/02

CKPNT 00260/04 00264/01 00265/04 00267/04 00268/04 00273/04 00291/04
00292/04

CKRSC 00533/02 00471/02 00476/02 00496/02 00530/02

CKSPC 00146/04 00271/01 00158/04 00159/04 00160/04

CKSUM 00409/04 00137/01 00177/01 00208/01 00422/04

CKSYS 00109/02 00105/02

CKVSU 00173/01 00179/01 00244/01 00457/01

CKXPN 00271/04 00278/04

CMPAR 00340/03 00263/01 00117/02 00332/02 00342/02 00413/02 00266/03
00357/03 00360/03 00361/03 00050/04

CNAME 00057/04 00017/01 00552/01 00047/04 00053/04 00055/04

CNPND 00104/04 00255/01 00353/02 00109/04 00113/04 00125/04 00132/04
00133/04

CNVDA 00066/04 00254/01 00178/02 00090/04

CNXOT 00345/04 00362/04

COM1C 00368/03 00350/03 00355/03

COM2C 00345/03 00363/03 00366/03

CORAD 00330/03 00301/03 00306/03 00315/03 00320/03 00327/03

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COUNT   00529/04 00487/04 00511/04

CPRNC   00369/03 00343/03 00358/03

CRFLG   00040/01 00516/03

CRPN0   00617/01 00245/01 00010/02

CSUBC   00223/02 00170/02 00194/02

CUDLA   00041/01 00155/01 00522/03

CUDSC   00039/01 00081/01 00153/01 00203/01 00163/02 00511/03 00513/03

D1      00387/01 00132/01 00281/01 00636/01 00266/02 00278/02 00351/02
        00371/02 00376/02 00293/03 00012/04 00088/04 00121/04 00334/04
        00338/04 00342/04 00365/04 00416/04

D10     00396/01 00397/01 00387/03 00079/04 00116/04 00128/04 00274/04

D100    00410/01 00071/04

D11     00398/01 00399/01

D12     00401/01 00134/01 00285/01 00486/01 00547/01 00171/03

D127    00411/01 00061/01

D128    00412/01 00507/01 00484/02 00482/03 00004/04

D14     00400/01 00314/04 00361/04

D15     00402/01 00289/01 00556/01 00236/03

D17     00403/01 00293/01

D2      00388/01 00285/02 00295/02 00389/02 00390/02 00008/03 00172/04
        00176/04 00185/04 00280/04 00309/04 00348/04 00423/04 00431/04

D20     00404/01 00297/01

D200    00413/01 00476/03

D23     00405/01 00301/01

D24     00406/01 00305/01

D27     00407/01 00309/01

D28     00408/01 00313/01

D3      00389/01 00472/01 00565/01 00115/02 00282/02 00361/02 00494/02
        00520/02 00105/03 00184/03 00209/03 00228/03 00238/03 00148/04
        00204/04
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D4      00390/01 00288/02 00183/04 00287/04 00319/04 00323/04 00433/04

D5      00391/01 00007/02 00120/02 00470/02 00142/03 00234/03

D6      00392/01 00364/02 00366/02 00277/04 00427/04

D64     00137/02 00126/02

D7      00393/01 00537/01 00399/02 00404/02

D8      00394/01 00534/01 00553/01 00293/02 00108/03 00218/03

D9      00395/01 00298/02 00040/04 00054/04

D999    00414/01 00056/02

DEADR   00120/03 00469/02 00224/03 00235/03

DECPN   00136/04 00114/04 00118/04 00126/04 00130/04

DECVL   00091/04 00067/04 00072/04 00077/04 00080/04 00084/04

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DEF31   00011/01 00322/01 00323/01 00324/01 00325/01 00326/01 00328/01

DEF32   00011/01 00327/01 00329/01 00330/01 00331/01 00334/01

DEF33   00011/01 00332/01 00333/01

DELOP   00420/04 00434/04

DESEC   00087/03 00079/03

DESIZ   00119/03 00017/01 00468/02 00001/03 00018/03 00045/03 00141/03
        00161/03

DESPN   00226/02 00151/02 00173/02 00176/02

DISCO   00034/01 00029/02

DIV     00474/04 00277/01 00506/01 00483/02 00425/03 00078/04 00078/04
        00182/04 00476/04 00478/04 00521/04 00524/04

DIV1    00499/04 00493/04

DOSUM   00136/01 00130/01

DPNO    00135/04 00014/01 00045/02 00052/02 00059/02 00110/04 00115/04
        00119/04 00127/04 00131/04

DRWBF   00498/03 00469/03 00474/03 00479/03 00488/03 00497/03 00550/03
        00554/03 00001/04 00003/04 00005/04 00024/04
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EBIAS 00420/02 00020/01 00414/02

EFCON 00111/01 00004/01 00459/01

EFFA1 00290/03 00299/03

EFFAD 00300/03 00297/03

EFRUN 00450/01 00051/01 00141/01 00189/01 00213/01

EM 00136/02 00122/02

ENDSB 00416/01 00015/01 00062/01 00301/02 00003/03 00021/03 00048/03
00164/03

ENDTS 00417/01 00012/01

EOJFL 00045/01 00064/01 00071/01 00214/01

EOSFL 00053/03 00050/03

ER1 00279/01 00086/01 00088/01 00092/01

ER12 00283/01 00176/01 00182/01

ER15 00287/01 00050/02 00058/02

ER17 00291/01 00630/01 00632/01

ER20 00295/01 00098/01

ER23 00299/01 00605/01 00607/01 00409/03 00428/03 00485/03 00487/03

ER24 00303/01 00009/02

ER27 00307/01 00400/02

ER28 00311/01 00408/02

ERERR 00126/01 00122/01

ERR 00315/01 00282/01 00286/01 00290/01 00294/01 00298/01 00302/01
00306/01 00310/01 00314/01 00316/01

ERROR 00114/01 00019/01 00319/01

ERWDS 00354/01 00373/01

ESPC 00518/02 00513/02 00118/03

EXMOD 00042/01 00156/01 00163/01

FLNGH 00424/01 00013/01

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FNTBS   00321/01 00337/01 00374/01

FTRBE   00429/01 00015/01 00468/01 00264/04

FUN14   00456/01 00455/01

GBUF    00500/03 00462/03 00532/03

GETDE   00038/04 00252/01 00551/01 00052/04

GETNS   00425/02 00310/02 00323/02

GETPN   00150/02 00257/01 00187/02 00188/02 00192/02 00218/02

GNS     00537/03 00020/01 00523/01 00472/03 00478/03

GRTXX   00461/03 00269/01 00465/03

GRWSU   00467/03 00464/03 00496/03 00534/03

GSC     00536/03 00020/01 00488/01 00489/03

GTLTS   00019/02 00619/01 00027/02 00033/02

GTNPN   00214/02 00260/01 00217/02

GTNXE   00357/02 00020/01 00219/02 00343/02 00350/02 00354/02 00387/02
        00397/02 00409/02

GWTXX   00531/03 00270/01 00526/01 00535/03

H8BT    00028/01 00378/02 00180/03 00174/04 00355/04

INVCH   00420/01 00419/01 00606/01 00026/02

INXOT   00360/04 00353/04

JBINC   00031/01 00025/02

JBINS   00030/01 00020/02

L7BT    00026/01 00362/02 00384/02 00392/02

L8BT    00027/01 00154/01 00030/02 00349/03 00354/03 00380/03 00481/03
        00405/03 00521/03 00220/04 00223/04 00286/04 00303/04 00311/04
        00350/04

LABEL   00134/02 00133/02

LM10    00219/01 00196/01

LOOP    00505/04 00512/04

M16     00528/04 00486/04
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MACAL 00238/01 00232/01 00236/01

MASUB 00221/01 00021/01 00224/01 00227/01

MAXFN 00337/01 00090/01

MB60 00415/01 00381/03

MD1 00386/01 00118/01 00001/02 00021/02 00048/02 00290/02 00322/02
00480/02 00492/02 00020/03 00039/03 00047/03 00054/03 00081/03
00084/03 00089/03 00163/03 00206/04

MD10 00378/01 00075/01 00499/01 00384/03 00283/04

*MD12 00377/01

MD16 00376/01 00447/04

MD2 00385/01 00228/01 00523/02 00173/03 00151/04 00488/04

MD3 00384/01 00317/01

MD31 00168/01 00157/01

MD32 00169/01 00159/01

MD33 00170/01 00161/01

MD4 00383/01 00478/02 00328/04 00371/04

MD5 00382/01 00542/01 00342/03

MD6 00381/01 00489/02

MD8 00380/01 00155/02 00222/03

MD9 00379/01 00473/02 00383/04 00396/04

MIND 00527/04 00485/04 00501/04 00507/04

MNXWD 00330/04 00339/04

MODNS 00339/01 00375/01

MOVAD 00592/01 00583/01 00584/01 00586/01 00590/01

MOVCT 00593/01 00020/01 00076/01 00588/01 00174/03 00223/03 00384/04
00397/04

MOVE 00582/01 00078/01 00241/01 00591/01 00177/03 00226/03 00387/04
00400/04

MOVMR 00584/01 00589/01

MPY 00445/04 00276/01 00505/01 00482/02 00407/03 00477/03 00483/03

MPYTM 00460/04 00446/04 00454/04

MPYX1 00461/04 00448/04 00457/04

MS10 00218/01 00195/01 00219/01

MSA 00236/01 00222/01 00233/01

MSB 00237/01 00223/01 00234/01

MVPNT 00302/04 00256/01 00313/04 00373/04

MXWPE 00418/01 00422/02

NAM0? 00602/01 00245/01 00608/01 00071/02

NDIRE 00048/04 00056/04

NEADR 00377/04 00329/04 00332/04 00333/04 00335/04

NOCPR 00271/03 00267/03

NOERR 00200/01 00191/01

NOPAS 00443/02 00015/01 00084/02 00101/02 00324/02

NOSEC 00114/03 00017/01 00634/01 00526/02 00158/03 00210/03 00154/04

NOSUM 00139/01 00133/01

NOTRB 00425/01 00013/01 00465/01

NPN00 00388/02 00375/02 00382/02

NSUWA 00426/01 00013/01 00069/01 00006/02

NXCHN 00189/02 00186/02 00221/02

NXOTE 00306/04 00315/04

NXOTL 00430/01 00013/01 00262/03 00272/04 00307/04 00346/04 00421/04

NXPTL 00428/01 00020/01 00263/04 00324/04 00370/04 00372/04 00413/04

NXTBT 00450/04 00458/04

NXTFP 00431/01 00013/01 00618/01 00472/02 00477/02 00486/02 00534/02
00019/03 00046/03 00055/03 00060/03 00145/03 00162/03 00176/03
00225/03 00227/03

OFFS1 00375/04 00318/04 00343/04 00351/04

OFFST 00374/04 00304/04 00312/04 00317/04 00341/04 00357/04 00364/04
00366/04

OLDJO 00072/01 00066/01

OPNSZ 00432/01 00016/01

OPNT1 00435/01 00016/01 00257/03 00270/04 00305/04 00344/04 00419/04

OPNTB 00434/01 00014/01 00435/01 00323/03 00178/04 00289/04 00321/04
00410/04

OPNTE 00433/01 00016/01 00317/03

OPNTP 00275/03 00259/03 00269/03 00272/03

OTEAD 00189/04 00171/04 00175/04 00184/04 00200/04 00203/04

OVFLO 00523/04 00480/04 00503/04 00516/04

PAKSC 00444/02 00016/01 00549/01 00561/01 00102/02 00156/02 00161/02
00164/02 00168/02 00197/02 00199/02 00201/02 00206/02 00270/02
00511/02 00035/03 00071/03 00092/03 00100/03 00110/03 00043/04
00282/04 00402/04

PKDIR 00140/03 00265/01 00017/03 00061/03 00165/03 00168/03 00210/03
00220/03

PLUSD 00526/04 00483/04 00504/04 00510/04

PN 00124/03 00015/01 00348/02 00373/02 00380/02 00123/03 00146/03
00149/03 00152/03

PNADR 00134/04 00105/04 00111/04 00120/04

PNDEC 00232/02 00230/02

PNEAD 00293/04 00016/01 00623/01 00635/01 00264/02 00284/02 00493/02
00519/02 00007/03 00098/03 00104/03 00183/03 00208/03 00229/03
00147/04 00180/04 00201/04 00266/04 00290/04

PNFND 00279/04 00276/04

PNLOP 00412/04 00417/04

PNNO 00231/02 00228/02

PNXXX 00234/02 00229/02

POST 00464/01 00210/01 00242/01 00458/01 00475/01

POSTI 00570/01 00467/01 00473/01

POSTM 00469/01 00474/01

POSTP 00569/01 00471/01 00478/01 00480/01 00493/01 00498/01 00500/01
00511/01 00514/01 00524/01 00525/01 00528/01 00529/01 00530/01
00531/01 00532/01 00533/01 00536/01 00546/01 00550/01 00554/01

POSTW 00477/01 00243/01 00470/01 00484/01 00492/01 00497/01 00541/01
00563/01 00568/01

PRETS 00217/04 00274/01 00265/02 00099/03 00042/04 00225/04

PRWIO 00234/04 00275/01 00562/01 00113/02 00271/02 00512/02 00037/03
00073/03 00094/03 00102/03 00112/03 00045/04 00243/04 00246/04
00403/04

PSTSC 00564/01 00545/01

REPNS 00395/04 00253/01 00404/04

REQC 00538/03 00468/03 00492/03

REQCD 00012/04 00463/03 00533/03 00551/03 00027/04

RLEXM 00149/01 00127/01 00164/01 00215/01

RSIGN 00531/04 00490/04 00494/04 00520/04

RTSXX 00552/03 00028/04

RTXSX 00547/03 00010/04 00026/04 00242/04

RWSWH 00247/04 00235/04 00239/04

SCCNT 00036/01 00190/02 00196/02 00210/02

SECCT 00439/02 00267/02 00277/02 00306/02 00311/02 00318/02 00416/02
00426/02 00499/02 00011/03 00024/03 00026/03 00214/03

SECFL 00115/03 00487/02 00490/02 00525/02 00528/02

SECIO 00438/02 00017/01 00112/02 00427/02 00428/02 00434/02 00503/02
00509/02 00030/03 00038/03 00040/03 00051/03 00062/03 00063/03
00068/03 00077/03 00082/03 00088/03 00090/03 00553/03 00224/04

SECLF 00161/04 00153/04 00156/04

SECTR 00033/01 00639/01 00308/02 00429/02 00064/03 00080/03 00406/03
00426/03 00475/03

SETD1 00082/02 00250/01 00088/02

SETD2 00098/02 00251/01 00108/02 00132/02 00171/02

SETPK 00337/02 00333/02

SFSTS 00199/04 00273/01 00209/04

SIGNN 00530/04 00489/04 00500/04 00518/04

SPKSP 00440/02 00335/02 00339/02 00406/02

SPNXX 00181/02 00175/02

SRCDR 00259/02 00012/01 00259/01 00184/02 00216/02 00313/02 00328/02
00418/02 00419/02

SRCH 00165/02 00209/02 00212/02

SRCNF 00314/02 00280/02 00305/02 00424/02

SRCNS 00268/02 00431/02 00435/02

SRCRT 00165/02 00220/02

SRCSV 00390/04 00389/04

SRET1 00415/02 00326/02 00386/02 00401/02 00405/02

SSECI 00117/03 00504/02 00508/02

STLSA 00207/03 00242/03

STPNO 00170/04 00272/01 00188/04

STRKI 00116/03 00502/02 00506/02

STSDS 00227/02 00172/02 00163/02

STSWA 00436/01 00014/01 00625/01

STT,S 00422/03 00267/01 00432/03 00207/04

STZ 00442/03 00268/01 00449/03

STZX1 00450/03 00443/03 00447/03

SUBC 00224/02 00222/02

SUBTB 00240/01 00239/01

SUMOE 00418/04 00414/04

SUPS1 00514/02 00500/02

SVPNA 00376/04 00326/04 00336/04 00367/04

SVPNS 00382/04 00248/01 00388/04

SYNTS 00038/01 00622/01 00155/03

SYSBF 00032/01 00106/02

SYSSC 00035/01 00103/02 00207/02 00514/03 00236/04

T,STM 00413/03 00399/03 00400/03 00402/03 00403/03 00410/03 00411/03
00423/03 00431/03

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T.STS   00398/03 00266/01 00512/01 00515/01 00620/01 00626/01 00412/03
        00471/03 00202/04

TANCH   00195/02 00205/02 00213/02

TBUFF   00127/03 00121/03

TEMP    00044/01 00108/01

TEMPP   00525/04 00475/04 00491/04

TK0S1   00138/02 00131/02

TMPTR   00243/03 00178/03 00179/03

TMPTS   00011/02 00621/01 00628/01 00633/01

TR0S1   00130/02 00118/02 00124/02

TRBSZ   00438/01 00014/01 00520/01 00522/01

TRBUF   00437/01 00014/01

TRKID   00437/02 00017/01 00111/02 00432/02 00436/02 00501/02 00507/02
        00069/03 00083/03 00085/03 00548/03 00022/04 00221/04

TSTMP   00226/04 00218/04 00222/04

TYPDR   00442/02 00086/02 00100/02 00262/02 00274/02 00327/02

UDNTS   00037/01 00079/01 00151/01 00201/01

UDONE   00340/04 00337/04

UMFWA   00043/01 00303/03

UMLWA   00029/01 00309/03

UNXEN   00322/04 00368/04

UNXPT   00369/04 00325/04

UPLSA   00103/03 00517/02

UPNTB   00316/04 00308/04

UPSC1   00097/03 00505/02 00516/02 00113/03

USELT   00028/02 00022/02 00024/02

VALSU   00184/01 00018/01 00068/01 00138/01 00174/01 00178/01 00181/01
        00205/01 00209/01 00312/03

WSBUF   00091/03 00023/03 00027/03 00043/03 00086/03
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WPTRB 00427/01 00013/01

WTBUF 00070/03 00066/03

WTXSX 00021/04 00025/04 00245/04

WXX 00244/04 00241/04

XFLG 00046/01 00167/02 00009/04

ZLOOP 00158/02 00162/02

ZMASK 00446/02 00379/02